

L. E. SHAW LIMITED

Manufacturers of
**HIGH GRADE STRUCTURAL
BURNED CLAY
AND
SHALE PRODUCTS**

Established 1861

PLANTS
CHIPMAN, NEW BRUNSWICK - ELMSDALE, NOVA SCOTIA
HEAD OFFICE - HALIFAX

CHIPMAN

SHUBENSHALE

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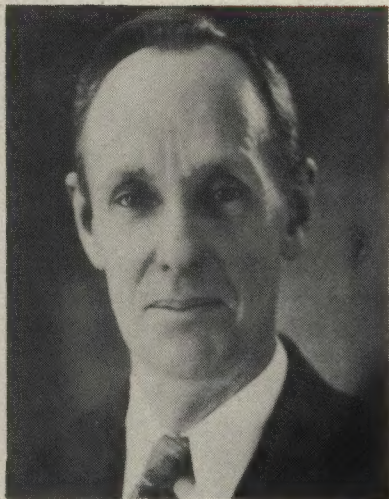
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FOREWORD



L. E. SHAW

President of the L. E. Shaw Ltd

The call for another catalogue becomes a stern reminder of the onward march of time. Not only a third, but a fourth generation moves up into place in the ever lengthening line.

In the manufacture of brick, the indomitable courage and spirit of Robert Shaw, nearly one hundred years ago, shaped the course of the SHAWS for possibly centuries to come.

From the early years of sacrifice and suffering, there has developed an industry serving the Maritimes and Eastern Quebec, with exports to Newfoundland, Bermuda and Maine.

In the growth of this industry the significant factors have been—MUTUAL TRUST—CONFIDENCE—UNDERSTANDING—and A UNITY OF EQUALS CO-ORDINATING THEIR EFFORTS THROUGH GOODWILL, INTELLIGENTLY DIRECTED. The ennobling force of these fundamentals has uncovered the hidden resources of the common man, enabling men and management to move forward together.

As we move rapidly toward the hill-top from which we can surely see POSSIBILITIES OF A BETTER WORLD, and perceive the difficult and trying chaotic national and international entanglements, INDUSTRY must give lead toward co-ordinating its efforts and its ideals in a comprehensive plan which will daily demonstrate progress away from damning destructive forces of greed, and from race and religious prejudice.

"New times demand new measures and new men,
The World advances, and in time outgrows
The laws that in our fathers' day were best;
And doubtless, after us some purer scheme
Will be shaped out by wiser men than we,
Made wiser by the steady growth of truth."

PRODUCTS MANUFACTURED AND DISTRIBUTED

BRICK

Chipman Smooth Face Brick
Chipman Tapestry Face Brick
Chipman Rough-Tex Face Brick
Chipman Bark-Tex Face Brick
Chipman Pressed Brick
Chipman Builders' Special Brick
Chipman Common Shale Brick
(solid or perforated)
Shubenshale Smooth Face Brick
Shubenshale Vertical Scored Face Brick
Shubenshale Builders' Special Brick
Shubenshale Common Brick
Backing Brick
Radial Chimney Brick
Radial Well Brick
Buff Brick
Fire Brick
Vitrified Acid Resisting Brick

MORTAR MIX, LIME AND PUTTY

Aged Lime Putty
Aged Lime Mortar
Air Floated Mortar Mix
Rock Lime
Mortar Colors and Waterproofing
Agents

STRUCTURAL TILE

Speedtile—Smooth Face
Speedtile—Corduroy Face
Speedtile—Scored
Silo Tile
Interlocking Tile—Smooth Face
Interlocking Tile—Scored
Terra Cotta Partition Tile
Terra Cotta Furring Tile
Structural Floor Tile
Terra Cotta Beam and Girder Fire-proofing

DRAINAGE PIPE AND TILE

Salt Glazed Vitrified Sewer Pipe
Salt Glazed Perforated Highway Pipe
Agricultural Drain Tile

CLAY

Dry Pulverized Clay (for Tennis courts)
Raw Lump Clay (for quoit beds)
Fire Clay

FLUE LINING

Rectangular and Round

RESEARCH - ENGINEERING ASSOCIATIONS

BURNED CLAY PRODUCTS, Brick and structural Tile, are the most widely adaptable of all PERMANENT building materials. From the humblest utilitarian role all the way up the scale to the most intricate forms of construction, they fit in and fill every need.

To better serve these fields we maintain a thoroughly trained and efficient Research and Engineering staff.

RESEARCH

Ronald H. Shaw has largely directed our research work and always toward higher standards. Periodic tests are conducted within the organization and also by independent laboratories such as the Massachusetts Institute of Technology of Boston; Department of Mines, Ottawa; Milton Hersey Company Limited, Industrial Engineers of Montreal; Nova Scotia Technical College, Halifax; and the University of New Brunswick, Fredericton. These tests have revealed a quality surpassing by a wide margin the requirements of the American Society for Testing Materials (A.S.T.M.)

Research in connection with the development of new products, as well as quality maintenance, has kept us in close contact with leading Clay Products manufacturers throughout Canada, the United States, and countries overseas. In 1938 R. H. Shaw spent several months in England and on the European Continent inspecting plants and giving close attention to research work on various types of mortar. These contacts have enabled us to share and reciprocate in new developments and to apply benefits that keep our plants and products completely modern and up-to-date.

ENGINEERING

Many of our clients have taken advantage of the services of our Engineering Department. The purpose of this department is two-fold, but primarily it

brings to our users years of engineering experience in the use of Structural Clay Products. No job is too small—none too large for its attentions. Naturally this covers a broad field, from assistance in planning your home to the furnishing of complete and accurate technical data for the more involved construction. In addition, improved methods of construction are carefully studied and tested. For example, 'Reinforced Brick Masonry' which is not new but is constantly finding a more extensive place in construction, is being given special attention — see page 15.

Research and experiment would indicate that this type of construction may be used to good advantage in the Maritime Provinces.

Mr. R. E. Johnson, coming to us directly from such construction as the Cornwallis Inn at Kentville and other well known C.P.R. Hotels, as well as Industrial Buildings, was destined to fill a large place in our Engineering Department. During

the development of our Shore Acres Sub-Division his experience and special abilities were brought into full play. In Mr. Johnson the home seeker has found a patient and competent friend—numerous inquiries are daily directed to his department—others seek personal interviews—with the result that an ever increasing number of brick homes are being erected in our cities and rural areas—satisfying and enduring homes of pleasing appearance and happy owners.

ASSOCIATIONS

Supplementing the work of the Engineering and Research Departments our firm is a member of the Structural Clay Products Institute (S.C.P.I.) which is a merger of the former Brick Manufacturers of America Association, American Face Brick Association, and Structural Tile Association. With all their resources in engineering and research, S.C.P.I. publish a wealth of literature and technical data, which, combined with our own services, is available at all times.



RONALD H. SHAW
Vice-President



R. E. JOHNSON
Sales and Engineering

A MARITIME INDUSTRY

Our two plants are strategically located to serve the Maritime Provinces, Eastern Quebec, Newfoundland, and Maine. Raw materials, fuel and labor are gathered from our own provinces to turn out a product one-hundred-percent Maritime. The tendency in the firing of our wares, especially during the war-time period, has been toward the elimination of wood—so much so that at present our coal consumption amounts to approximately fifty tons per day. As local mill wood has given place to Maritime coal, so also coal may and will eventually give place to Maritime oil. Our aim is always toward the best in the production of the finest product under the most favorable working conditions.

The ELMSDALE plant is not as yet completely motorized, but it does have the most modern equipment known in the production of quality products. At this plant we manufacture Brick, Speedtile, Interlocking Tile, Partition Tile, Agricultural Drain Tile, Sewer Pipe and Flue Lining. Production capacity, under normal conditions, is ample to handle peak demands. Prompt and efficient shipping facilities are made possible by two level sidings which connect with the C.N.R. main line, providing accommodation for loading twelve cars at one time.

Owdis P. Isenor, General Superintendent, with a lifetime of brick-manufacturing experience, works in close collaboration with a number of well trained, experienced workers, many of whom now live in their own brick home within close range of the plant itself.

The plant at CHIPMAN, New Brunswick, is the younger sister, but differs from ELMSDALE plant in that it is electrically driven and is slightly smaller. First opened in 1929 it was designed primarily for the purpose of manufacturing quality FACE BRICK. One of the finest shale deposits on this continent is located here and it is largely due to the quality of this shale that CHIPMAN FACE BRICK have become famous. While FACE BRICK is the specialty at Chipman other products including Interlocking Tile, Agricultural Drain Tile, and small sizes in Terra Cotta Partition Tile are also manufactured. Here

too is produced AIR FLOATED MORTAR MIX, the latest addition to our line.

The combined present production capacity of our two plants is one hundred thousand brick per day, or the equivalent in hollow-ware. However, anticipating increased demands in the post-war period we are now giving careful consideration to further modernizing and expanding both plants.

Mr. A. J. MacIntosh is in charge of our Saint John, New Brunswick office and plant and is no stranger to our many New Brunswick friends.

We are justly proud of the 'all-out' war efforts of our employees of Elmsdale and Chipman, as well as members of our staff. To those who have given up all to join active services we can only say, our hearts and thoughts are with them until that welcome day of return.

Without these men, the tremendous task of keeping production in tune with war

needs has doubled the burden on those who have remained. Each and every man has accepted and met the challenge of hard, unspectacular work — and without complaint. These added burdens however have not deterred several of our staff from assuming real wartime responsibilities.

Our Secretary-Treasurer, Major Macpherson, veteran of World War I, has not only handled all increased detail required by a wartime government, but has given freely of his time and experience to the Reserve Army, acting as Quartermaster of a large unit.

Also, Allen C. Cole, who early in the war was loaned to the Aircraft industry, has now returned to take up his former duties, together with the responsibility for sales promotion. He will be stationed in Halifax.

The foregoing is a very brief outline of our operations. Much more could be written but even this would provide little more than a vague idea of the activities involved in the manufacture of Burned Clay Products. We have many times had the pleasure of showing interested parties through our plants, and we welcome such opportunities. Both plants are open for inspection at any time.



J. A. MACPHERSON
Secretary-Treasurer



ALLEN C. COLE
Sales and Advertising

ADVANTAGES OF BRICK CONSTRUCTION

A brick is the most remarkable structural building unit in use today. It is remarkable because it is the oldest manufactured building material known to man, and yet, with very few changes in design and use it offers all the modern advantages of more recently developed materials.

Durability of brick is not measured in years, but in centuries. Some historians contend that brick were made as many as twelve thousand years ago. While this is some thousands of years before the earliest recorded history, there is much evidence to support this claim. Hence, when we speak of brick as a time tested material, it certainly is no idle talk.

Other building products, not tested through years such as these, list many of the following advantages, but brick is the only building unit that can claim them all.



JASPER KENNEDY
Head Burner, Chipman Plant



A. J. MacINTOSH
Representative for New Brunswick

FIRE-SAFETY

Bricks are forged in fire. They can not burn. A brick wall then represents a completely fire safe unit. Lowest insurance rates testify to its protection from fire.

PERMANENCE

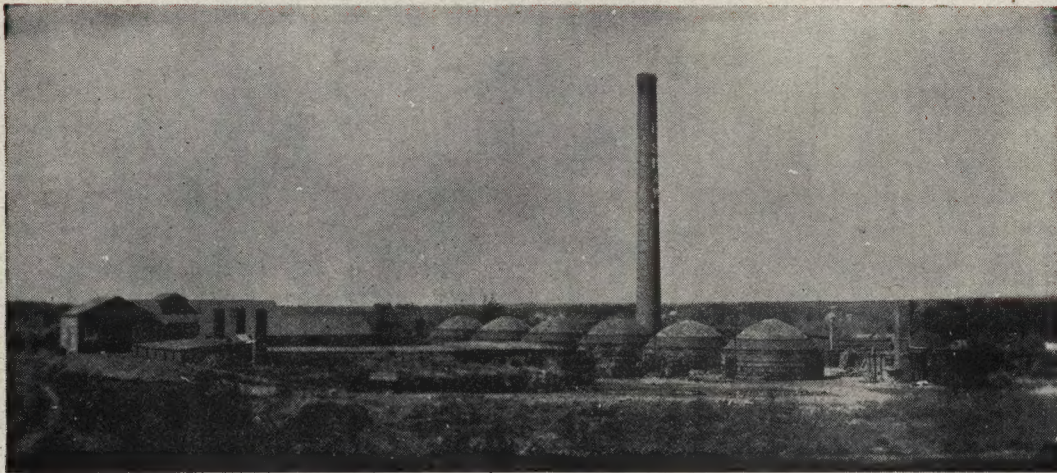
Brick properly made can neither rot nor rust. Because of their durability, and the fact that masonry strength increases with age, brick construction resists the ravages of time and weather, and is there to stay. The evidence of this is seen daily in the numerous brick buildings still in use although built fifty and a hundred years ago.

STRENGTH

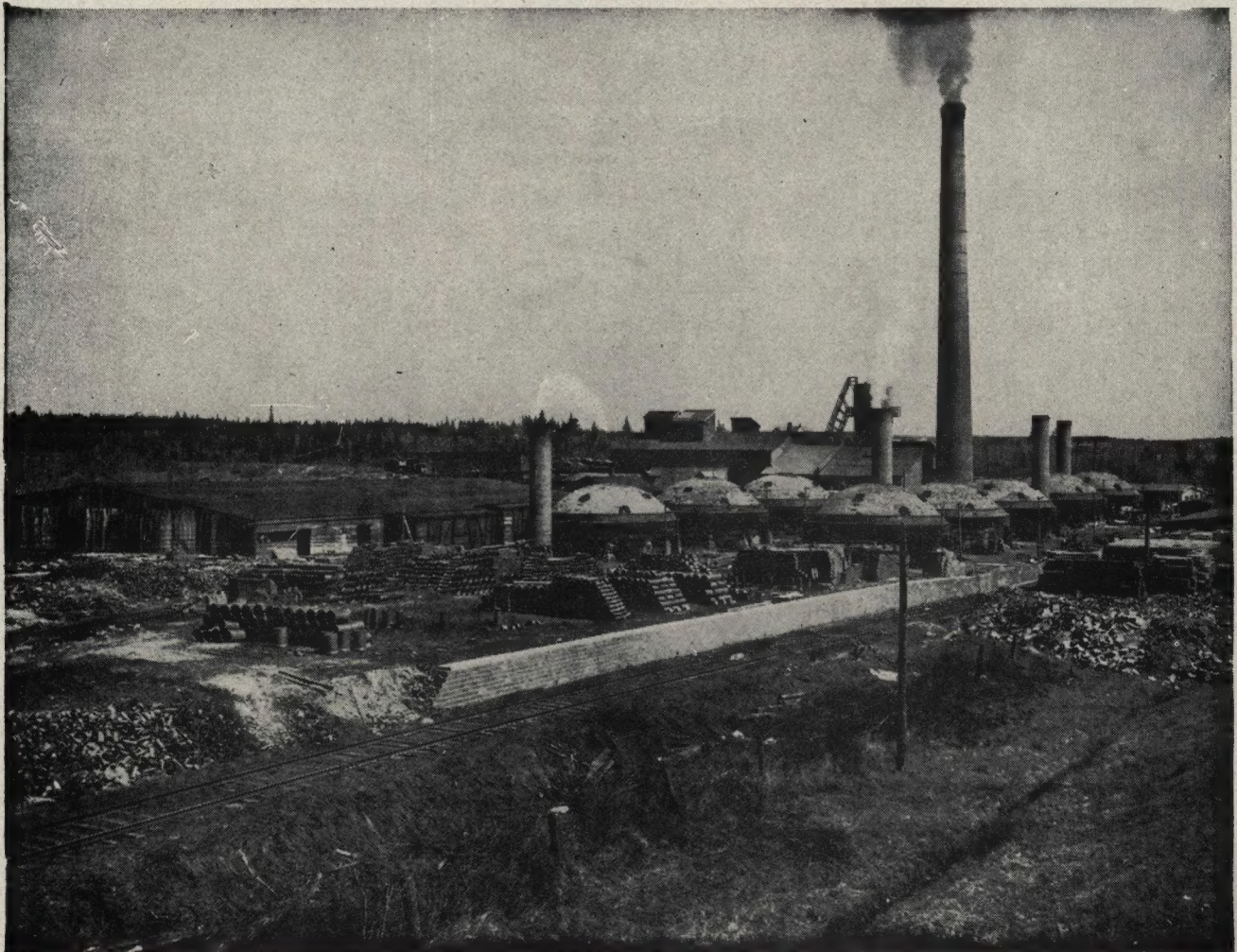
The high structural strength of brick makes possible the design of buildings with loads carried

Plant Superintendent, Owdis Isenor (standing) surrounded by key men at Elmsdale, Lloyd Weagle, Murray Miller, Lou Miller, and Earl Ashley.





Plant at Chipman, N. B.



Plant at Elmsdale, N. S.

directly on the walls. Brick do not warp, swell, crack or shrink, and the strength of brick masonry actually increases with age.

BEAUTY

Brick are available in a wide variety of colors and textures. Colors are natural and mellow with age. Many pleasing blends are possible in a rich combination of colors that can not fade. Textures range from the smooth to the rustic. Variety is not confined to the brick alone, for many types and colors of mortar joints are used which further accentuate the individual beauty of brick.

Different bonding arrangements make possible many more pleasing effects. Some of the more commonly used mortar joints and types of bonds are illustrated in this catalogue, but there are many others that lend an unlimited scope in design and imagination.

Dirt and soot do not mar the appearance of brick as in most building materials. Only in very exceptional cases is any cleaning required.

ADAPTABILITY

Brick have probably the widest scope of all building materials. From the simplest and smallest building to the largest and most complicated construction, it plays an important role. They are not confined, however, to use in buildings alone. There are extensive other uses such as walks, fireplaces, residential trim, chimneys, wells, incinerators, footings, and a host of others.

INSULATION

Brick have one of the highest degrees of insulation values in any structural building unit. Some idea of their thermal resistance may be obtained when we consider that a twelve inch brick wall when subjected to as high as 2,000 degrees of heat on the one side, is barely warm on the other. The hand can readily be held upon it.

Hence, buildings of brick are warm in winter and cool in summer.

WEATHER RESISTANCE

Brick, in themselves, resist moisture, and are not affected by frost. With good tight mortar joints, water does not penetrate through a brick wall, and the damaging effect of alternate freezing and thawing weather is nullified.

ECONOMY

In brick construction no costly forms are required, and hence it is rapid to build.

Over a period of years, however, the true economy of building with brick is more apparent. Because colors are permanent there are no periodic painting costs. Because of the fireproof qualities, insurance rates are lower. Because of their durability, maintenance costs are at a minimum. Because of their permanent nature and maintained beauty, the annual depreciation percentage is lower.

MODULAR DESIGN

Brick can be readily manufactured to dimensions suitable for use in modular planning.

Loading Shale
at the Chipman
Plant



CHIPMAN BRICK

At our Chipman, New Brunswick, plant we specialize in the manufacture of high-grade shale face brick, and no expense is spared, from shale pit to finished product, in order to make a brick of the very highest quality. Our Chipman face brick plant is as modern as any plant in Canada, and great care

for a group of five brick tested:

Modulus of Rupture—lbs. sq. in. 1600.
Compressive Strength—lbs. sq. in. 21,700.
48-Hour Absorption—3.81%.
Coefficient of Saturation—0.78.

These tests were on perforated brick made at our Chipman plant. Solid brick would have higher values for compressive and transverse strength.

ROUGH-TEX

DRY-PRESS

TAPESTRY

SMOOTH-FACE

BARK-TEX

In freezing and thawing tests run on our brick by the Department of Mines, Ottawa, "Chipman Brick (Hard Shale) showed no evidence of failure after fifty cycles of freezing and thawing." From these and other authoritative tests, all showing the strength and toughness of Chipman shale brick, we are confident in stressing its permanence, and feel that the architect, the contractor, and the owner, will find this the "right brick for the job."

Face brick are manufactured at both our Elmsdale and Chipman plants. However, for manufacturing efficiency, and also due to the inherent qualities of the shale and its ability to produce many beautiful colors by changes in the manufacture and burning schedule, we stress our Chipman Shale Face Brick, and recommend its use for buildings where

its beauty, permanence, and uniform color and size are especially adapted.

is taken in every stage of the manufacture and burning. Tests are run on our brick from time to time to assure a high standard of quality.

Tests. Chipman face brick are dense, well formed, and are burned hard to ensure long life, good rich colors, and medium low absorption. In tests run by Walter C. Voss, Professor of Building Construction at the Massachusetts Institute of Technology, who is a well-known authority on brickwork, and Consultant on architectural construction and materials, the following are the average figures

Efflorescence. Chipman face brick are free of the soluble salts which cause efflorescence, and buildings erected of Chipman face brick are particularly free from efflorescence. Chipman face brick are made with special care so that they absorb very little of the soluble salts, which are almost always present in cement, salt water sand, and in some mixing water.

TEXTURES and COLORS

Chipman Face Brick are available in a number of different textures and colour arrangements to suit individual tastes and to conform to the various styles of architecture. While these are described below they must be seen to be best appreciated. Samples will be gladly furnished upon request. In these descriptions please note that the term "uniform" means that the colors indicated can be supplied in uniform shades. Where the term "range" is used, it means these colors can *not* be supplied in uniform shades. For example, "brown range": This means that when browns are supplied they will be a mixture of various shades of brown. "Flash range" is a brick in which several colors are intermingled on the same brick.

CHIPMAN SMOOTH FACE

A rich deep red, and uniform in size and colour. The face of the brick is smooth with sharp, clean cut corners, and are as mechanically perfect as it is possible to make this type of brick. These brick are used extensively in schools, commercial and residential structures—in fact all buildings where permanence of colour and cleanliness is desired. Absorption 2% to 6%.

CHIPMAN TAPESTRY FACE

The ruffled matt or velvety texture of this brick gives a deep rich beauty to any building, and we especially recommend this texture for use where textured brick are required. The texture of tapestry face brick is neither too rough nor too smooth, and is suitable for all types of work, such as schools, churches, hotels, office buildings, stores, homes, fireplaces. Chipman tapestry face brick give walls of everlasting beauty and charm, and may be obtained in

the following colors: Red (uniform); red (range); brown (range); black or gunmetal (range); flash range; mingled shades. Mingled shades consist of a blending of all of these various colors. Blending may be done at the time of shipping, or the various colors may be shipped separately permitting the contractor to make his own selection. Absorption 2% to 6%.

CHIPMAN ROUGH TEX FACE

(Vertical scored)

This has a rugged appearance and is well adapted for use in any building where a rougher texture than our tapestry face brick is required. Chipman rough texture or vertical scored brick may be obtained in the following colors: Red (uniform); red (range); brown (range); black or gunmetal (range); mingled shades. Suitable for all types of buildings. Absorption 3% to 6%.

CHIPMAN BARK-TEX FACE

The texture of this brick gives a very pleasing appearance to fireplaces and decorative work. Imprinted on the face of the brick is a pattern taken from the bark of an elm tree. This brick may be obtained in red uniform or flash range. Well adapted for use with light or dark mortar, for inside or outside work. Absorption 3% to 6%.

CHIPMAN DRY PRESSED BRICK

We are now making a dry pressed brick. This brick is made from ground shale in a dry or nearly dry state, and is formed into bricks under great pressure. These brick are then burned to a deep rich red,

Maple Leaf Dairy
Ltd., Halifax, N. S.



and lay up well with white or colored mortar, giving a richness and depth of color that can only be had with pressed brick. Pressed brick, due to their method of manufacture, have sharp, well defined corners, and straight edges, and may be laid up with fine mortar joints. They are equally good for outside use and fireplace work. Chipman pressed brick are of good red color, uniform in size, and are very strong and weather resistant. Due to the rapid rate of absorption of dry pressed brick, it is recommended that they be dipped before laying. This is to prevent the water being robbed from the mortar before it has a chance to set.

Absorption, submerged in cold water for 48 hours, 6% to 8%.
Approximate size, 8" x 2 1/4" x 3 7/8".

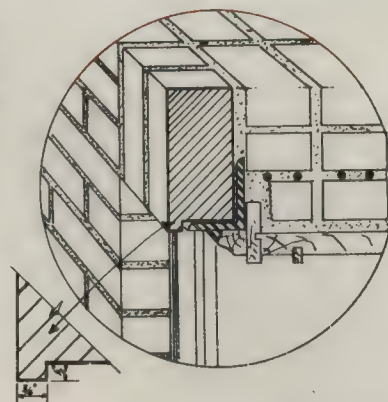
Compressive strength, 12,000 pounds per square inch. Weight, 5 1/2 pounds.

CHIPMAN "BUILDERS' SPECIAL"

This grade of brick may be substituted for face brick where economy is the essential factor. These are good, hard-burned brick, having a smooth face, and are uniform in size. They are of good, rich red color. They are made solid (no holes) and similar to face brick in strength, absorption, size, and high resistance to disintegration by frost, but are not as carefully selected as to color. Shipped packed in straw. Absorption 3% to 7%.

CHIPMAN COMMON SHALE BRICK

For flues, warehouses, stores and commercial buildings, and for backing-up where low absorption backing is desired. All brick are suitable for outside work, and will be strong and have no mechan-



Special Lintel Brick as designed by
W. A. West, Provincial Architect,
Province of Nova Scotia.

ical weakness. Are not selected for size or color, and are made perforated or solid, as desired. Not packed in straw. Absorption 5% to 9%.

CHIPMAN BACKING BRICK

For inside use only, such as partitions and backing-up for outside walls. These brick are suitable for backing up, but are not recommended for use on outside walls. Absorption on this brick will be less than 10%. It has a minimum compressive strength of at least 5000 pounds per square inch.

SPECIAL SHAPES

Special shapes in face brick will be made to detail drawings. Special "Lintel Brick" are also obtainable (see illustration) Lintel Brick are advantageous in providing over openings, a soldier course that does not require cutting on the job, and at the same time provides a drip at the head of openings to protect angle irons and frames, and prevent stains from angle irons.

Special brick should be ordered from four to six weeks in advance of shipping date.

VITRIFIED BRICK

Specially hard burned brick for acid resistant work can be made to order. These brick will have an absorption of 1% to 2%. They should be ordered from four to six weeks in advance of shipping date.

BUFF BRICK

While at the present time we do not manufacture Buff Brick in either plant we carry a limited stock and can supply them in various shades and textures. We should be pleased to submit samples upon request.

Navy Power House Stack using regular Radial
Chimney Brick



FIREPLACE BRICK

All brick listed as face brick are suitable for fireplace work, and textures and colors suited to each fireplace design may be found in our variety of richly colored shale face brick. Dry Press brick are used very extensively for this purpose. Brick for fireplace use are packed in cartons.

CHIMNEY BRICK

The increasing popularity of Chipman Brick for use in chimney construction is evidence of its perfect adaptability for this purpose. The rugged construction of Chipman Common Shale Brick is ideal for use in exterior surface. For interior and unexposed surfaces Chipman Backing Brick may be used.

SHUBENSHALE BRICK

Shubenshale face brick are de-aired, well-formed, and are burned sufficiently hard to insure long life, good rich colors, and a medium to low absorption. Milton Hersey Co. Ltd., Industrial Chemists, Engineers and Inspectors made a freezing and thawing test using Shubenshale Face Brick and from their report we quote: "All bricks came through the test without sustaining any damage at all." Shubenshale face brick have a crushing strength of at least 12,000 pounds per square inch. The transverse strength is at least 1500 pounds. Absorption from 3% to 7%.

Shubenshale brick are made at our Elmsdale, Nova Scotia, plant, from shale to which only enough clay is added to make the necessary plasticity. All face brick are made solid.

TEXTURES AND COLORS

Chipman is our main manufacturing and distributing centre for face brick, but Shubenshale face brick may be had to meet small demands in adjacent areas. Our Shubenshale face brick are similar in size, texture and color to our Chipman face brick. See page 18.

SHUBENSHALE "BUILDERS' SPECIAL"

Similar in all respects to Chipman Builders' Special. See Page 11. These brick are particularly adapted for outside flues, parapet walls, office and commercial buildings; and in fact, any work where a better than common brick appearance is desired. Absorption 3% to 7%.

SHUBENSHALE COMMON BRICK

This brick is suitable for outside work but is not selected particularly for size or color, it is used largely for flues, warehouses and similar low cost constructions. You may choose either perforated or solids. Absorption 5% to 9%.

ELMSDALE CLAY BACKING BRICK

For inside use only, such as partitions and backing-up for outside walls. These brick are suitable for backing up, but are not recommended for use on outside walls. Absorption on this brick will be less than 12%. It has a minimum compressive strength of at least 5000 pounds per square inch.

Brick Sizes. Our face brick conform to the standard size accepted for use in Quebec, the Maritime Provinces, and the United States, which is approximately as follows: 8" long, 2 1/4" thick, 3 3/4" in width. Our hard-burned brick will be approximately these dimensions. Mingled shades face brick will vary more in size than uniform colors. It is, however, impossible to overcome this condition as, in order to produce some of the colors, considerable more shrinkage takes place in the burning. However, this variation in size in the mingled shades is not too serious a matter for all practical purposes.

Please Note. We are now making all face brick solid, they are packed in straw for shipping. Special arrangements may be made to have face brick shipped in cartons, at extra cost.

Another of the new Naval Buildings



CHIPMAN FACE BRICK OFFERS YOU

CHIPMAN ROUGH-TEX-MINGLED SHADES

Rough-Tex in Mingled Shades is a blend of the full range of colors with gunmetal blacks, and varying degrees of reds and browns. The roughly scored texture gives a friendly, rustic appearance that is ideally adapted for home construction, as well as other structures where appearance is featured. Colors are permanent, mellowing with age. Many other pleasing combinations are possible by simply varying the percentages of blacks, browns, and reds.



CHIPMAN TAPESTRY-FLASH RANGE

Here in Tapestry texture is a rich combination in which varying shades of color are found in the brick themselves. Dark or light centres in browns and reds in the individual brick bring an autumn blend that is beautiful beyond compare. Like Mingled Shades, this combination may be laid with dark or light mortar to suit the individual taste.

CHIPMAN TAPESTRY-MINGLED SHADES

Mingled Shades are shown here in a lighter texture than that of Rough-Tex. It gives an equally pleasing effect and is always in popular demand. Here, too, various types of mortar joints in light or dark mortar, will give an added variety to suit all styles of architecture.



A RICH VARIETY OF BEAUTY IN RED

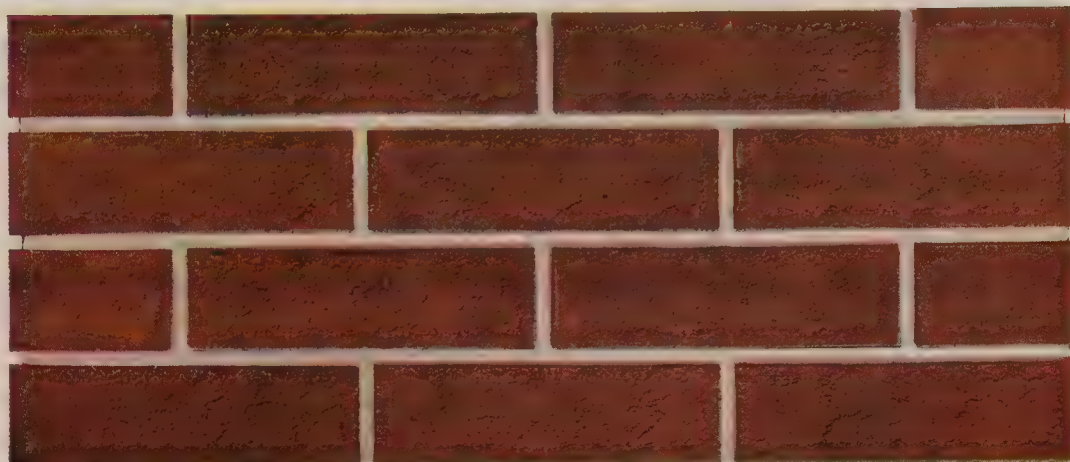


CHIPMAN
ROUGH-TEX.
DARK RED

Chipman Rough-Tex, in addition to the dark red shown, is available in a medium shade. A uniform selection in either medium or dark red gives a smart appearance which, if desired, may be softened by a mixture of the two.

CHIPMAN
SMOOTH FACE
RED

Chipman Smooth Face Red is one of the most widely used face brick in the Maritime Provinces. They are uniform in size, and color. Chipman Builder's Special are similar to Smooth Face Red but are somewhat less uniform in color.

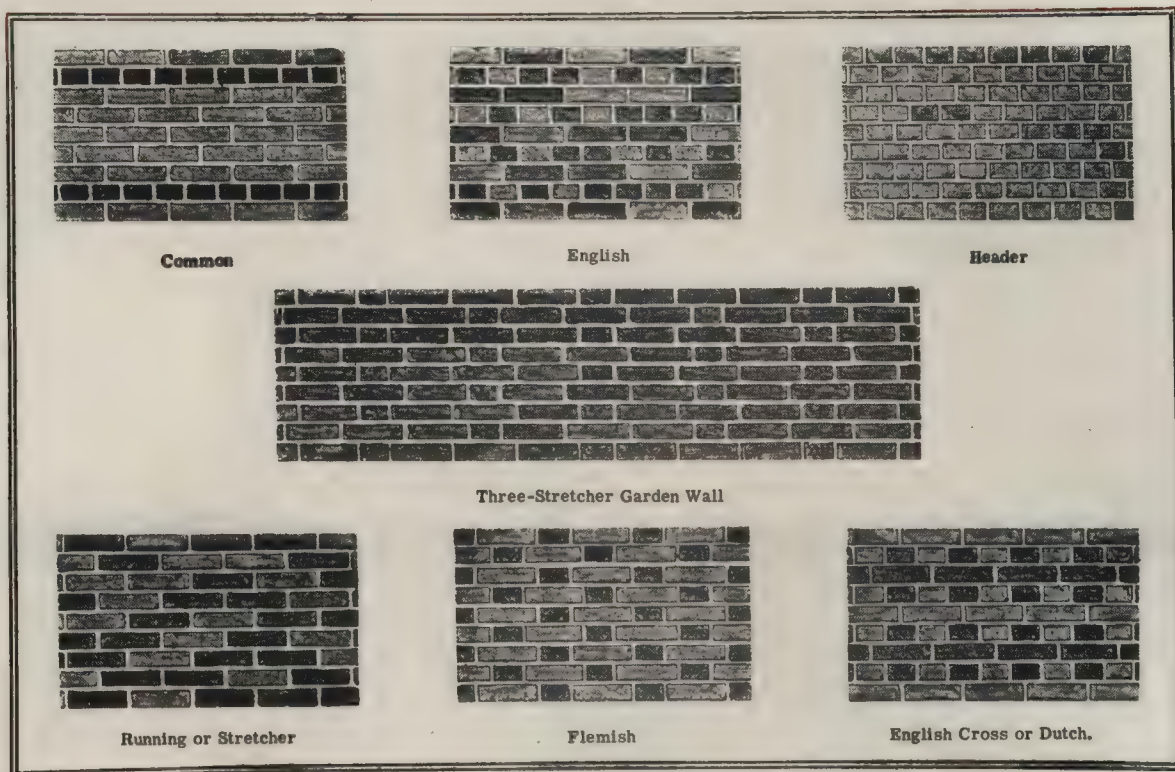


CHIPMAN
TAPESTRY
MEDIUM RED

Chipman Tapestry are shown here in a medium range, and are also available in a dark red, or a blend of the two, if desired.

In the selection of any of the brick shown, it is well to remember that further variety is possible in the careful selection of the numerous types of bonds and mortar joints.

TYPES OF BONDS

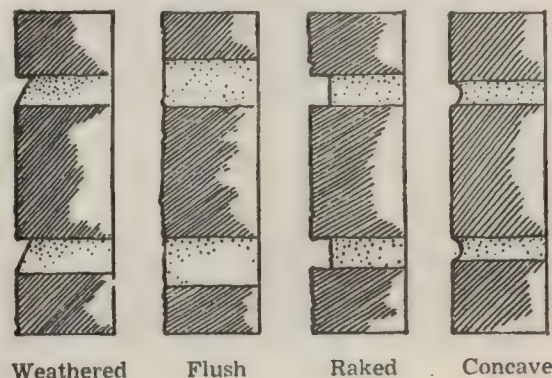


Bond is the method of arranging brick so that by their overlapping the entire wall is thoroughly tied together, throughout its length and breadth, acting as a unit in resisting stresses. Brick laid lengthwise of the wall are known as "Stretchers," and brick laid across the wall are "Headers."

Aside from developing the longitudinal and transverse strength of the wall, there are many charming effects to be obtained in the various methods of bonding. Some of the more commonly used bonds are illustrated above.

MORTAR JOINTS

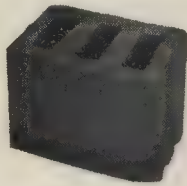
The mortar joint constitutes a considerable portion of the finished wall, and careful consideration should be given to the type used. From the standpoint of appearance, the richness of tone of the individual brick may be displayed to better advantage through the selection of the proper type of joint. Various types of mortar joints are illustrated below.



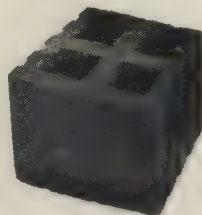
RADIAL CHIMNEY BRICK

Radial chimney brick as made from shale at our Elmsdale plant, have been used on a number of stacks in the Maritime Provinces and Newfoundland and are proving their superiority over other types of stacks.

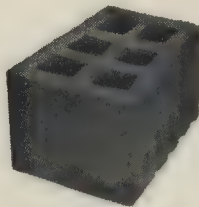
By using four different sizes of brick in a stack, the walls are securely tied together giving a one piece durable structure. If you contemplate building a stack, we suggest you study the many advantages of our radial chimney brick.



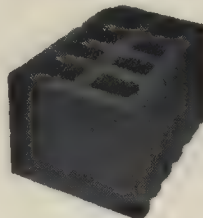
"N" Brick 3-hole



"A" Brick 4-hole



"B" Brick 6-hole

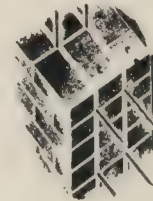


"C" Brick 8-cell

Stacks built of radial chimney brick have: (1) Long life, due to being made of burned shale. (2) Low upkeep cost, due to their resistance to penetration of stack gasses, tar, and pitch. (3) Highly resistant to freezing and thawing. (4) Are quickly and easily erected, as the bricks are made for the job, and are of the right shape and size. (5) May be built much cheaper than of ordinary brick, stone, or

REINFORCED BRICK MASONRY

Reinforced Brick Masonry is now a proven method of construction. The introduction of steel reinforcement provides resistance to flexural stresses caused by bending. The reinforcing bars are placed in the masonry, either in the vertical, or the horizontal mortar joints, or in both. Bent up bars and vertical stirrups are easily introduced and effectively resist web stresses.



Thus it may be seen that reinforced brick masonry possesses all of the advantages of reinforced concrete plus the additional features of appearance and economy. No costly forms are required, as the reinforcement is introduced as the work progresses.

Uses: Reinforced Brick Masonry is used for all types of complete structural frames, for columns, for simple, continuous and cantilever beams and slabs, and for lintels. It provides stiffness to parapet walls and chimneys. On the West coast, where building regulations were revised to require structural designs of buildings to resist earthquakes, reinforced brick masonry has been used very extensively. The increasing demand for reinforced brick masonry is, in a large part, due to its low cost and superior strength in comparison with comparable types of construction.

concrete, due to being large uniform units of light weight. (6) Being light in weight they require less foundation, and consequently save money. (7) Also, due to the light weight, less labor and material are required.

School
Aroostook Jct.
New Brunswick



TERRA COTTA

Building and Partition Tile

Terra cotta building and partition tile are made and burned in much the same manner as brick. For inside work, we supply clay tile, medium burned. Where tile are to be used for exterior work, either exposed or as a base for stucco, we recommend the use of hard burned shale tile. Standard partition tile are scored on both sides to receive plaster. They may, however, be supplied smooth on one side and scored on one side, or smooth on both sides, if specially ordered. Partition tile are approximately 12" by 12" and are made in thickness from 2" to 10".

The Advantages of Terra Cotta Partition Tile

FIREPROOF—	They can not burn.
DURABILITY—	High strength, yet light in weight.
PERMANENT—	Will not warp, crack, decay, shrink, swell — unaffected by water.
CONVENIENT—	Right size for easy laying and handling—No special mortar required.
INSULATION—	Good thermal insulation — high resistance to sound.
ADAPTABILITY—	Best plaster base — natural and mechanical bond for any type of plaster, cement, lime or gypsum.
FLEXIBLE—	May be left exposed, or painted. Used for basement floors, structural tile floors, wall linings, backing for brick, base for stucco.
ECONOMICAL—	Low first cost—low upkeep.
CLEANLINESS—	Clean to use (does not track up floors) Vermin-proof.
AVAILABILITY—	Large stock carried at all times.

Terra Cotta partition tile is the only product on the market that can claim all of these advantages. They cost only slightly more than frame partitions.

Note: Let us or your building supply dealer help you select the proper tile for each particular job. For additional information on partition tile, see page 39.

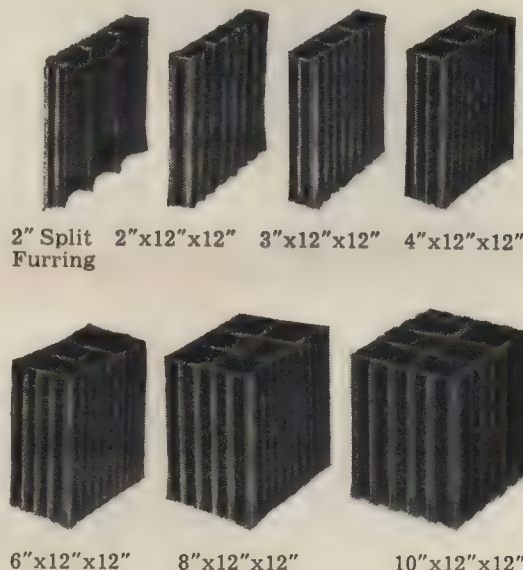
USES:

EXTERIOR WALL FURRING: Best, most economical fireproof furring and plaster base for exterior masonry or concrete walls.

ALL TYPES OF PARTITIONS, PLASTERED OR OTHERWISE: Fireproof corridor walls or partitions, room partitions, elevator and dumb-waiter shaft, stair wells, etc.

FIRE WALLS: All types of fire division walls, and fireproofing for steel columns.

COMBINATION STRUCTURAL TILE AND CONCRETE FLOORS: Used as a structural member, form, and plaster base for ceiling in the construction of combination tile and concrete ribbed floor.



A Logical Basement Wall Lining

Hollow tile is exceptionally well adapted for lining the inside of basement walls, and for basement partitions, being dust-proof, damp-proof, fire-proof and vermin-proof.

A Logical Plaster Base

Terra Cotta partition tile laid up with cement-lime mortar is a permanent structure, and has no peer as a base for plaster. Terra Cotta is not weakened by water taken from the plaster, and does not weaken the plaster; in fact, it absorbs only sufficient mortar water to ensure a firm bond between plaster and tile, by impregnating the tile surface with mortar. Expansion and contraction of plaster and tile due to temperature changes are approximately the same; thus, they do not tend to separate as is the case when some other plaster bases are used. Terra cotta forms a solid base; and, therefore, requires less plaster than open structure bases. Terra cotta is scored to increase the "grip" of plaster.

Terra cotta may be cut with a trowel or hammer to fit between pillars, posts, and openings, thus reducing building costs.

Strength and Permanence

Partition tile is scientifically designed for the purpose for which it is to be employed, and gives maximum strength with minimum weight. Being well formed and burned by experienced men, it gives permanent structure—not affected by heat, cold, dampness, or chemicals—never warps or disintegrates.

Insulation

Hollow tile offer effective insulation against heat, cold, and dampness, and resist the action of frost. The insulating air spaces act as a barrier for sound transmission, and find a wide field of use in hotels, apartments, and hospitals.

Sound Insulation

In all tests run by the United States Bureau of Standards at Washington, D. C., on sound transmission through partitions, it was found that clay

tile was superior to gypsum block in sound insulation.

They state that "with homogeneous walls of any type it has been proved by both theory and experiment that the weight of the wall per unit area is the most important factor in determining the sound insulation." Also that "the sound insulation factor for homogeneous walls is in fact proportional to the logarithm of the weight per unit area."

The Building Research Station of England says, in regard to sound transmission. "The dominant factor is mass; generally speaking, the heavier the partition the more effective it is."

Special light weight partition tile may be had, but should be ordered well in advance of shipping date to ensure delivery.

Fire-proofing for steel beams and girders is made to order and may be supplied for various sizes of steel.

BASEMENT FLOORS



Tile foundation walls and floors assure warm, dry basements, an additional useful room is made possible at very little cost.

A dry and permanent cellar floor is illustrated above. This floor is easily and quickly laid at very reasonable cost. Bring ground first to a level grade. Over clay or wet soil spread cinders or gravel. Dampen and tamp solidly to a depth of 3 or 4 inches. Cover this prepared floor with 3" or 4" hard burned partition tile laid on side. Sprinkle tile with water and finish with a minimum of two inches top coat of one part cement to three parts graded sand below one-quarter inch in size. Strike to a true surface with a straight edge and when beginning to stiffen finish with a wood float.

With foundations in wet soil, tile drains led to an outlet or sewer, should be placed outside foundation footings. A dry basement is thus assured.

REINFORCED TILE FLOOR AND ROOF CONSTRUCTION

ADVANTAGES OF USING STRUCTURAL FLOOR TILE

Light in weight, yet a very strong type of permanent floor construction for spans from 10 to 30 feet.

Very economical in form work.

Fire-proof, dust-proof, draft-proof, vermin-proof and sound-resistant.

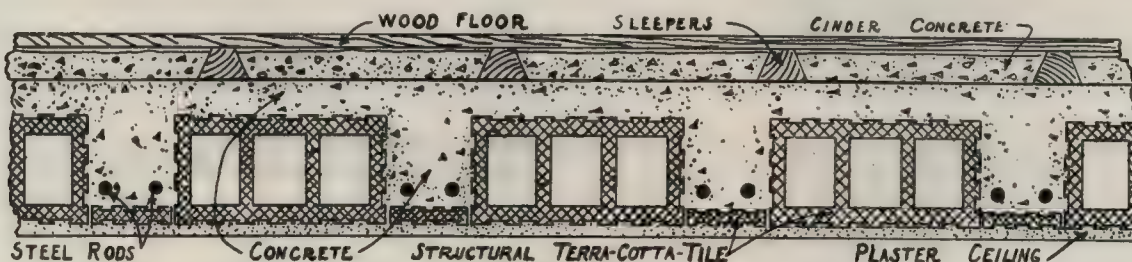
Equal in strength to an equivalent thickness of concrete.

Reduces the amount of plaster required. Two coat plaster work is all that is necessary.

Is free from condensation.

The cost compares favorably with wooden or other types of permanent construction.

For further information, send for a separate booklet giving complete details, load bearing capacity, quantities, etc.



EXPLANATION OF TABLE ON PAGE NINETEEN

This table gives the safe superimposed loads in pounds per square foot on combination structural clay tile and concrete floors. The weight of the floor slab has been deducted from the safe total loads. The table is based on continuous construction where the reinforcing extends into the adjoining slabs at least one-fourth the span. To compute loads for simple and end spans refer to the notes below the table. Loads such as concrete fill, finished floor, plaster and partitions should be deducted from the load given in the table to obtain the net live load.

Only one combination of stresses in steel and concrete is given, and in no case does the floor load given exceed these stresses. Interpolations for other combinations of stresses in steel and concrete can be made as shown in the following examples.

EXAMPLES

No. 1. Given a 17-foot span continuous on both ends, live loads 50 lbs. plus 32 lbs. for partitions and plaster, total superimposed load 82 lbs. Referring to table we find the safe superimposed load for 6" tile 2" concrete top (6+2) tile spaced 16" centers, with 2½" square bars in each rib is 86 lbs.

No. 2. Given a 17-foot span continuous one end only, live load 82 lbs., including partitions and

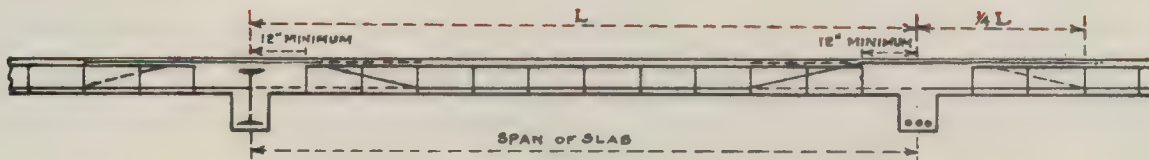
plaster. Use $M = \frac{WL}{10}$. Referring to table, 17 foot

span 6+2, reinforcing 2½" round bars in each rib, allows 117 lbs. superimposed load. Then referring to note at foot of table, 5/6 of 117 lbs. load plus 60 lbs. weight of slab equals 148, minus 60 equals 88 lbs. safe superimposed load.

No. 3. Given a simple span 17 foot supported at both ends with a total superimposed load of 82 lbs. including partitions and plaster. Referring to table, 17 foot span 6+2, reinforcing 1½" round 1¾" round bars in each rib allows 153 lbs. superimposed load. Then referring to note at foot of table 2/3 of 153 lbs. load plus 60 lbs. weight of slab equals 142, minus 60 lbs. equals 82 lbs. safe superimposed load.

No. 4. If it is desired to stress the steel to only 16,000 lbs. per sq. in. then the total load could only be $\frac{16000}{18000}$ or 7/8 of the total load for 18,000 lbs. per sq. in.

Example, using the given table, 17 foot span 6+2 with 2½" round bars allows 117 lbs. safe superimposed load. Then 117+60=177 total safe load. Then 7/8 of 177=155 safe total load if unit stress in steel is only 16,000. Then 155-60=95 lbs. safe superimposed load.



SAFE SUPERIMPOSED LOADS IN POUNDS PER SQ. FT. FOR COMBINATION TILE AND CONCRETE FLOORS

UNIT STRESS IN STEEL 18,000 LBS.

UNIT STRESS IN CONCRETE 700 LBS.

M	WL 12	4'x12'x12' Tile, 16' Centers 1 1/2" Concrete Top					6'x12'x12' Tile, 16' Centers 2" Concrete Top					8'x12'x12' Tile, 16' Centers 2 1/2" Concrete Top					10'x12'x12' Tile 17' Centers 3" Concrete Top					12'x12'x12' Tile, 18' Centers 3 1/2" Concrete Top					M=12 WL 12			
		Weight floor per sq. ft., 43 lbs. Concrete per sq. ft., .208 cu. ft. Tile per sq. ft., .75 sq. ft.					Weight Floor per sq. ft., 60 lbs. Concrete per sq. ft., .292 cu. ft. Tile per sq. ft., .75 sq. ft.					Weight Floor per sq. ft., 76 lbs. Concrete per sq. ft., .333 cu. ft. Tile per sq. ft., .75 sq. ft.					Weight Floor per sq. ft., 99 lbs. Concrete per sq. ft., .495 cu. ft. Tile per sq. ft., .706 sq. ft.					Weight Floor per sq. ft., 120 lbs. Concrete per sq. ft., .625 cu. ft. Tile per sq. ft., .667 sq. ft.								
n=15																											n=15			
Values k	p j	.00302	.00425	.00545	.00620	.00694	.00350	.00446	.00502	.00553	.00681	.00329	.00405	.00499	.00589	.00710	.00372	.00437	.00525	.00605	.00709	.00408	.00471	.00550	.00623	.00708	Values k j			
		.258	.299	.330	.348	.361	.274	.305	.320	.331	.360	.267	.293	.320	.340	.367	.281	.333	.325	.345	.367	.294	.312	.331	.348	.366				
		.914	.900	.890	.884	.888	.909	.898	.893	.890	.888	.911	.902	.893	.887	.878	.906	.899	.892	.885	.878	.902	.896	.890	.884	.878				
Reinforce's Each Rib		2-1/2"	1-1/2"	2-1/2"	1-1/2"	2-1/2"	2-1/2"	2-1/2"	1-1/2"	2-1/2"	1-1/2"	2-1/2"	2-1/2"	1-1/2"	2-1/2"	1-1/2"	1-1/2"	2-1/2"	1-1/2"	2-1/2"	1-1/2"	1-1/2"	2-1/2"	1-1/2"	2-1/2"	1-1/2"	Reinforce's Each Rib			
10		81	124	169	197	226	277	364	406	451	557	508	636	770			916	1099				1481					10			
11		59	95	132	155	179	218	290	325	362	450	406	513	624			740	890				1203					11			
12		43	73	104	123	144	174	234	264	295	369	329	419	512	614			606	732	852			991	1153			12			
13		30	56	82	99	116	139	191	216	242	305	269	346	425	511			502	608	712			828	965			13			
14			42	65	79	94	112	156	178	200	255	222	288	356	430	503		419	512	600	701			697	815	937		14		
15			31	51	63	77	90	128	147	167	214	183	241	300	365	429		352	433	510	597			592	695	801		15		
16				40	51	62	71	106	122	140	181	152	202	254	312	368		297	368	436	513	590			505	595	690	791	16	
17				30	40	50	56	86	101	117	153	126	170	217	267	324		252	315	375	443	511			434	514	597	686	17	
18					31	40	44	71	84	98	130	104	144	185	230	305		214	270	324	385	445			374	446	519	599	18	
19						32	33	57	69	81	111	85	121	158	199	238		182	233	280	335	389			323	388	454	526	609	19
20								46	56	68	94	70	102	135	172	208		155	200	243	292	342			280	338	398	463	538	20
21								34	46	56	80	56	85	116	149	181		131	172	212	256	301			243	296	350	409	477	21
22									36	46	67	44	71	99	129	158		110	149	184	225	265			211	259	308	362	424	22
23											37	34	58	84	112	139		93	127	160	197	234			183	227	273	321	377	23
24											29	47	71	96	121			77	109	139	173	207			158	198	240	285	337	24
25											37	38	59	82	106			63	93	120	152	183			136	173	211	253	301	25
26												29	49	70	92			51	78	104	133	162			117	151	186	225	269	26
27													40	60	79			40	65	89	116	143			100	131	164	199	242	27
28													32	50	68			31	54	75	101	126			84	114	144	175	216	28
29														41	59			43	64	87	110				70	98	126	157	193	29
30														34	50			34	53	75	97				58	83	110	139	150	30

Note: This table is based on $M = \frac{WL}{12}$ Top steel over support for negative "M" same area as for positive "M" at center of span. Top steel over support to extend at least $\frac{1}{4}$ of span length. Top shell of tile figured as a part of flange. Neutral axis in flange. Shear computed on basis that the tile adds $2\frac{1}{2}$ " to the width of the concrete ribs. The maximum shear for loads below and to the left of the heavy line does not exceed 60 lbs. per sq. in. Hollow Tile must be equal to medium class according to A. S. T. M. specification.

For end spans, when $M = \frac{WL}{10}$ use $\frac{3}{4}$ of total superimposed load and dead weight of floor.

For simple spans, when $M = \frac{WL}{8}$ use $\frac{3}{4}$ of total superimposed load and dead weight of floor.

Loads above and to the right of the heavy line should be used only for computing loads for end or simple spans.

All bars shall be embedded not less than one diameter from the face nor less than $\frac{3}{4}$ inch.

INTERLOCKING TILE

Interlocking Tile is a large hollow, permanent, load-bearing unit of dimensions shown in illustration and so designed as to permit the mason placing it in the wall with one hand. It is used alone for walls or as a backing for face brick. One size and shape builds walls 8", 12", 16", 20", etc., in thickness. The wonderful stability of the Interlocking Tile wall is due to the interlocking feature and the four inch mortar beds. The unit is made with smooth faces for exposed work or with grooved keyed surface forming an ideal surface for interior plaster or exterior stucco.

Interlocking Tile is an ideal and a proven building material for the construction of warehouses for the storage of apples and potatoes. During the past twenty years a large number of such buildings have been built in the Maritime Provinces.

We present herewith some of the features of Interlocking Tile, which make this type of construction so desirable:—

Great Strength—Interlocking Tile Masonry crushes at loads of from 35 to 50 tons per square foot. Walls are safely loaded to one-sixth of these values.

Good Atmospheric Conditions—We are advised by owners of Tile warehouses that variations in temperature are avoided without difficulty and the proper degree of humidity easily maintained.

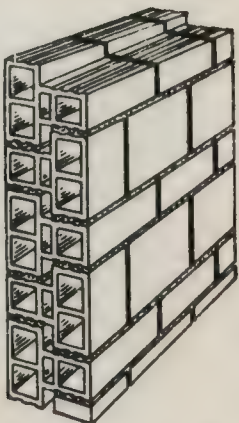
Low Maintenance—The question of painting does not exist and repairs are practically nil.

Well Insulated—Practically twice the insulation of solid concrete.

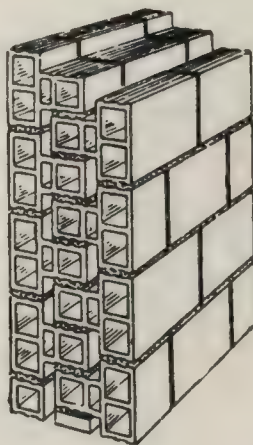
Low Insurance—A Tile warehouse with fire-resistant roof covering has a substantially lower rate than the wooden building, and this rate applies to both building and contents. We have official assurance of different rate reductions varying from 75c to 85c per hundred dollars. There are many features, of course, entering into the fixing of a rate. One owner, however, in New Brunswick, reports a rate on his new Tile building, built in 1928, of \$1.00 per hundred as compared with a rate of \$3.10 per hundred on his old wooden warehouse which had been destroyed by fire on the same site. This reduction of 67%, which applies to both building and contents, is a remarkable saving.

Reasonable Cost—For permanent wall construction, the first cost is most reasonable. The total increased cost, in most cases, is only a small percentage over the cost of all wooden construction.

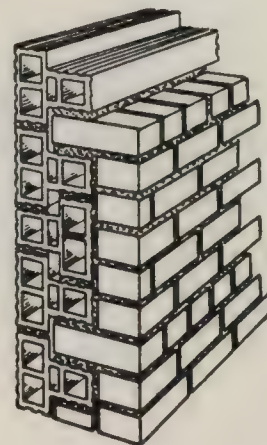
The saving in maintenance and in insurance, not to speak of the added sense of security afforded, more than offset the slightly increased first cost.



8 inch Interlocking Tile Wall

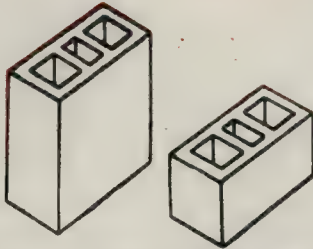


12 inch Interlocking Tile Wall

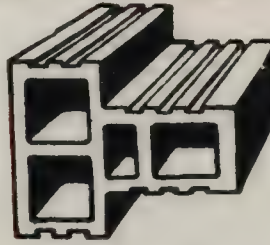


12 inch Tile-Backed Wall

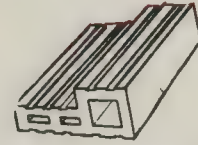
INTERLOCKING TILE DETAIL



Standard Detail or Corner Tile
6" and 3" Lengths Section



Interlocking Tile
8" wide, 6 1/4" high, 12" long
(Available Smooth or Scored)



Improved Starter Tile
For 8" and 12" Tile Walls

ESTIMATING QUANTITIES

By calculating the number of square feet in the wall surface, the number of Interlocking Tile required may be obtained from the following data:—

Type of Wall	No. of Interlocking Tile per sq. foot of net wall surface.
8" Tile Wall.....	2.4 Interlockers.
12" Tile Wall.....	3.5 Interlockers.
16" Tile Wall.....	4.4 Interlockers, plus one-sixth as many Bonding Tile.
12" Wall—8" Tile, with 4" Face Brick.....	2.2 Interlockers.
16" Wall—12" Tile, with 4" Face Brick.....	3.0 Interlockers.

ESTIMATING DETAIL TILE REQUIRED

Corner Tile: For walls 8" thick multiply the total number of lineal feet of exposed corners by 4/3 and the result will be the total number of corner tile required. For walls 12" thick multiply the total number of lineal feet of exposed corners by 2, and the result will be the number of corner tile required. A complete corner tile consists of one piece 6" long and one piece 3" long.

Jamb Tile: Refer to cut showing "jamb construction with Detail Blocks." It will be observed that the large jamb block is identical to large block used at corner. The small Jamb block is a fraction of the small block used at the corner. Enough of these small corner blocks to fill the order will be scored at the plant and shipped ready to be broken on the job to make the fractional blocks. (Each scored small corner block makes two fractional blocks).

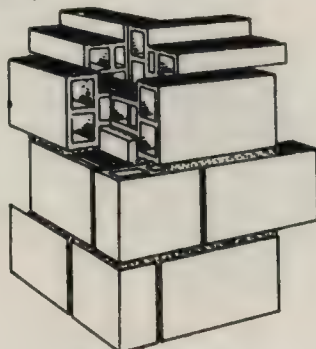
For a 12" wall the large jamb block is identical to the large block used at the corner. The jamb block corresponding to the "Small Jamb Detail Block" in cut for 8" wall, is a fraction of the large corner block. (Enough of these large corner blocks to fill the order will be specially scored at the plant and shipped ready to be broken on the job, to make the fractional blocks. Each scored large corner block makes two fractional blocks).

Ordering. For 8" wall ascertain total number of lineal feet of jamb, multiply the number of lineal feet by 4/3 and result will be number of complete jambs required for 8" wall. For 12" wall ascertain total number of lineal feet of jambs and this number will represent the total quantity of complete jambs required for 12" wall.

It will be noted that each complete jamb includes two blocks. Always order complete jambs and specify if for 8" or 12" wall.

Starting Tile: The improved starting tile unit is made in one piece and may be used for both 8" and 12" tile walls. One starting tile is required for each lineal foot of wall. Starting tile may also be used at the top of the wall if desired. For 8" tile walls faced with brick it is not necessary to use starting tile, a heavy bed of mortar under the 'tongue' of the tile will serve the purpose.

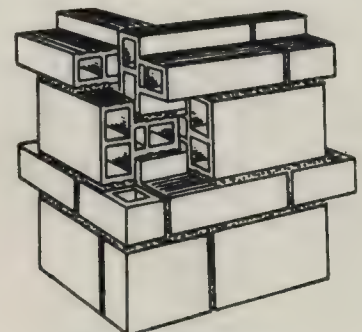
Weights: The Interlocking Tile weighs approximately 16 lbs., and is equivalent in volume to approximately six brick. The weight of the Interlocking Tile wall is approximately 60 lbs. per cubic foot.



Corner Construction
Twelve Inch Wall



Jamb Construction using Standard
Detail Tile for 8" Wall



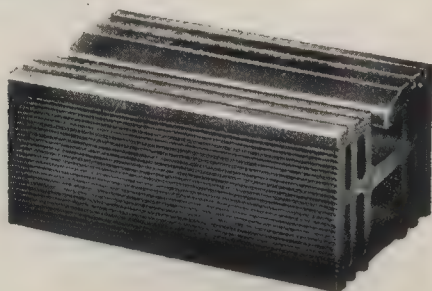
Corner Construction
Eight Inch Wall

SPEEDTILE

"THE FASTEST LAID WALL IN THE WORLD"

Speedtile is a permanent, load-bearing tile made from hard burned shale. The same method and care go into its manufacture as in our best face brick. They are made in pleasing, natural red shades, which are both attractive and permanent, allowing their use where a good outside appearance is desired.

Speedtile are so named because of a specially designed handle built right into each unit. This convenient arrangement is perfectly balanced so that a mason or helper can pick it up with one hand with a minimum of effort. Permitted the free and uninterrupted use of his trowel hand, the mason can lay many more tile in a day than would ordinarily be possible when two hands are necessary to lift and set each tile. Hence Speedtile walls are laid up in the shortest possible time.



The unique handle adds another important feature. As the tile are laid up, it provides a break in the through surface at the top of the tile. Thus there are no through mortar joints, simplifying the construction of a watertight wall.

As a load-bearing building unit, the compressive strength of Speedtile closely approaches that required in most codes for brick. This high compressive strength is made possible by means of more and shorter vertical webs than are incorporated in any other building tile. With these shorter, additional webs, the tile is more resistant to impact, too, and provides an opportunity for an excellent end joint, the mortar being actually keyed right into the cells.

The insulating qualities of a Speedtile wall are of the highest. The additional cells, built right into the tile, provide dead air space that reduces its thermal conductivity to a minimum. Buildings are warmer in winter and cooler in summer, and require less fuel for heating purposes.

Speedtile is one of the most adaptable building units known, and can serve many purposes. It is equally efficient in the construction of walls from eight inch thickness up, or as a backing unit for brick or stone. As a base for stucco, it has no equal for it provides a surface that will bond perfectly and permanently. Since there is no shrinkage there is no danger of stucco cracking or disintegrating from this cause. The use to which Speedtile can be extended

is practically limitless. Some of the more common are as follows:

Warehouses
Farm Buildings
Dry Kilns
Institutions
Recreation Halls
Machine Shops
Foundations

Schools and Universities
Factories
Garages
Service Stations
Stores
Dairies
Residences

From the foregoing, it will be noted that Speedtile enjoy the advantages of brick construction. Its rapid construction cuts labor costs to a minimum, the laying of a single tile being the equivalent of laying six brick. Mortar quantities required are also less, as are handling and freight costs. With such reductions in time and material the initial construction costs are less. The permanent advantages of solid brick masonry, at such low cost, make Speedtile today's most economical wall.

SIZE

The standard Speedtile stretcher is of the following dimensions—width $11\frac{7}{8}$ inches—height 5 inches—depth 8 inches.

Various detail block are manufactured for use at window and door jambs and corners. The dimensions of these are shown on page 24.

It is impossible to make ceramic products exactly to size. For exposed Speedtile walls, the dimensions are within an accuracy limit of 2%, plus or minus, and for other tile, the tolerance is 3%, plus or minus. A tolerance of 3%, plus or minus, is established under the A.S.T.M. Standard Specifications C 34-36.

DESIGN OF SURFACE

The face of Speedtile is considered to be that side to which the handle is attached. They are made with Smooth Face, both sides, for exposed walls, Corduroy Face, both sides, for exposed walls, or Dovetailed for plastering or stucco. Plaster or stucco can also be very satisfactorily applied to the Corduroy Face tile.

Smooth Face tile are carried in stock in greater quantities than the other textures, and smaller jobs can usually be serviced from stock without delay.

TESTS

As with brick, periodic tests are made on Speedtile so that quality standards are maintained at all times. Results of such tests reveal the following:

Compressive Strength

2835 lbs. per sq. in gross area

Coefficient of Heat Transmission

.24 B.T.U. for 8" Structural wall

.15 B.T.U. for $13\frac{1}{4}$ " Structural wall

LOAD CARRYING CAPACITY

In general, Speedtile may be used in the same way as solid brick masonry, so far as strength is concerned. With a compressive strength of 2835 lbs. per square inch, gross area, it far exceeds the minimum requirements of all building codes covering Load Bearing Structural Tile. For instance, the Toronto Code (By-Law No. 15124, dated April 3rd, 1939) requires Load Bearing Structural Hollow Tile to have a minimum compressive strength of 1600 pounds or more.

QUANTITY ESTIMATES

Practically no loss through breakage will be experienced when using Speedtile, but it is usually advisable to make a small allowance, 1% to 3% for contingencies, depending on conditions. The work should be reviewed to determine the number of fractional lengths, ($2\frac{7}{8}$ ", $5\frac{7}{8}$ ", $8\frac{7}{8}$ ") large jambs, small jambs, corners, etc. Many jobs require no fractions, but it is advisable to include in your order at least 2% of three-quarter stretchers, No. 1 A. If these three-quarter stretchers are not actually required when laying out the work, the builder can usually find some section where they can be used, so as not to have them on hand at the completion of the job. The quantity of small jambs and large jambs will be about equal.

In estimating the quantity of fittings, etc., for piers and pilasters, each such feature should be carefully laid out in plan for two contiguous courses, and each type of unit counted. From the number of such courses involved, quantities are readily determined.

PROCEDURE IN ESTIMATING QUANTITIES, EIGHT INCH WALL

Jambs: Total the number of lineal feet of jambs for both sides of openings. Multiply this total by 2.25 and the result will be the total number of jamb tile required. Half of the total quantity will be Large Jambs and half will be Small Jambs.

Corners: Total the number of lineal feet of corners of the building and multiply by 2.25. The result will be the number of No. 8 Corner blocks required.

Speedtile Stretchers: Determine the net wall area in square feet after deducting openings. Multiply this area by 2.25. The result will be the number of Speedtile required without consideration of the Jamb Tile or Corner Tile. To arrive at the accurate quantity, deduct .33 stretchers for each small jamb, .75 stretchers for each large jamb, and .33 stretchers for each corner.

Note: If stretcher fractions are desired, first determine the number required and deduct from the

quantity of full stretchers, .75 for each three quarter stretcher, .50 for each half stretcher, and .25 for each quarter stretcher. For the average job three-quarter stretchers are usually all that are required. These generally run approximately 2% of the net stretchers required.

How to Order: Refer to detail of units and order by name and number, being careful to specify the face finish required. Jambs and corners should be ordered complete. (It will be noted that each jamb and each corner is comprised of two units which are detailed as A, B, C, D, and E. A complete No. 8 corner will be comprised of an A block and an E block. A complete large jamb will be comprised of either an A block and a B block, or two A blocks. A small jamb will be made up of a C block and a D block, or two C blocks, depending on whether they are to be used with wood or steel frames). For an eight inch wall no reference need be made to the block details A, B, C, D, or E, but merely ordered as the required number of complete No. 8 corners, and the required number of complete No. 3 and No. 4 large and small jambs, or No. 5 and No. 6 large and small jambs, depending on the window frames.

Example: For a building with a total net wall area of 4,000 square feet, with 160 feet of jambs for wood frames and 84 feet of corners, the quantities of Speedtile for an eight inch wall would be arrived at as follows:

Jambs:

$$160 \times 2.25 = 360 = 180 \text{ No. 3 Large Jambs.} \\ 180 \text{ No. 4 Small Jambs.}$$

Corners:

$$84 \times 2.25 = 189 = 189 \text{ No. 8 Corners.}$$

$\frac{3}{4}$ Stretchers:

$$2\% \text{ of } 9000 = 180 = 180 \text{ No. 1A—}\frac{3}{4} \text{ Stretchers}$$

Speedtile:

$$4000 \times 2.25 = 9000$$

Less—

$$75 \times 180 = 135$$

$$.33 \times 180 = 59$$

$$.33 \times 189 = 62$$

$$.75 \times 180 = 135 \text{—} 391$$

$$8609$$

Plus

1% Damage
Allowance

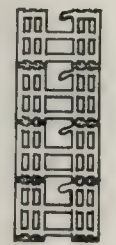
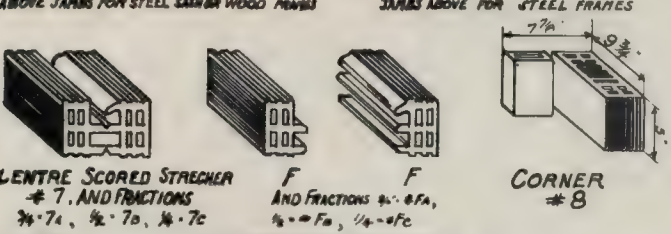
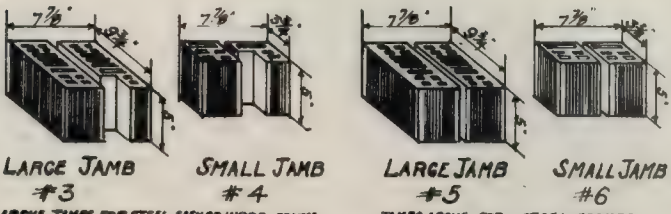
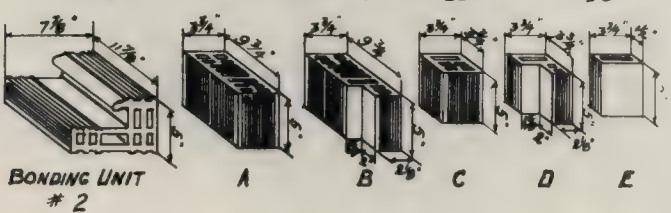
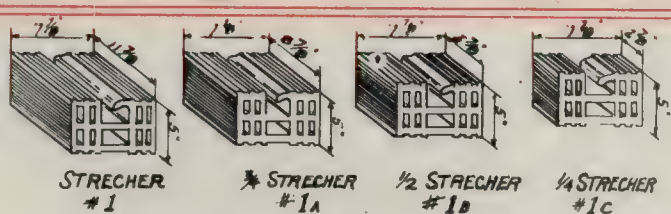
$$86 = 8695 \text{ No. 1 Stretchers}$$

$$9424 \text{ Total Speedtile.}$$

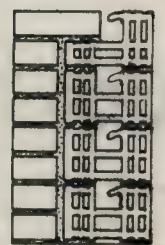
(Continued on Page 25)



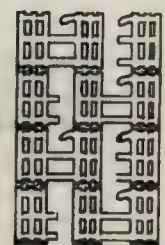
SPEEDTILE DETAIL



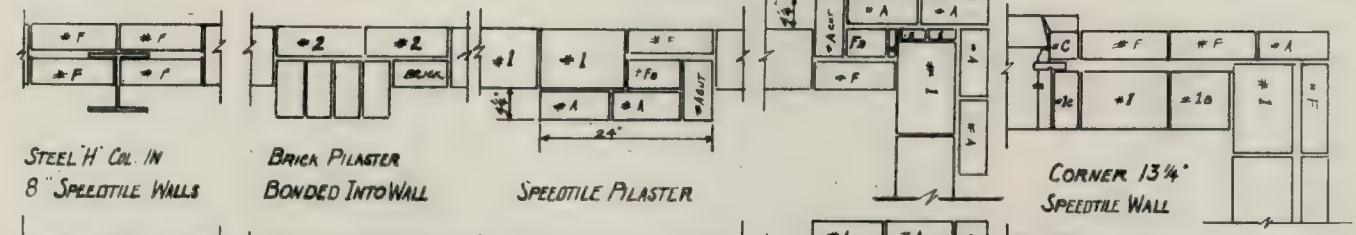
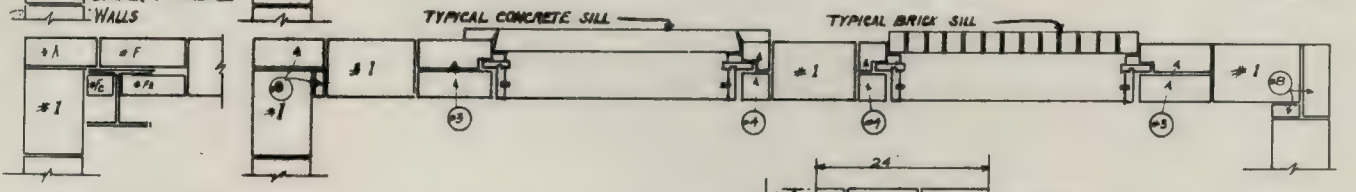
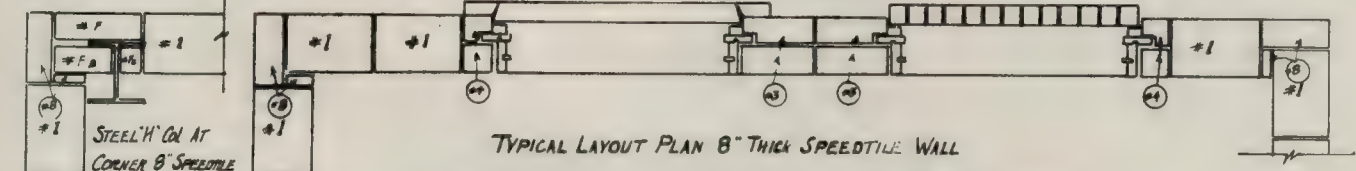
8" SPEEDTILE WALL



12 1/2" BRICK AND SPEEDTILE WALL



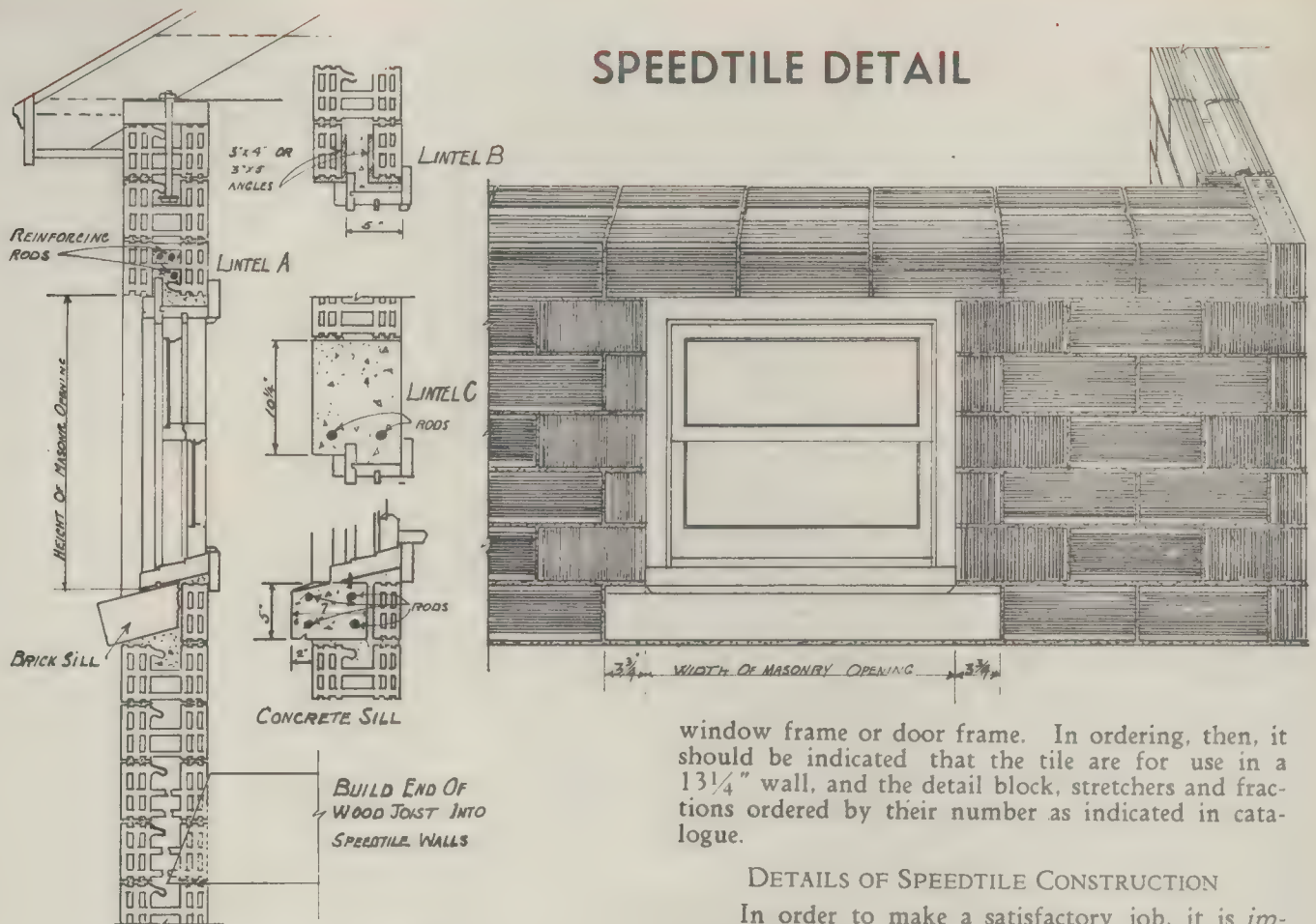
13 1/4" ALL SPEEDTILE WALL



NOTE:-- UNITS #7, #7A, #7B, #7C ARE UNITS CORRESPONDING TO #1, #1A, #1B, #1C SPECIALLY SCORED IN CENTRE TO BE SPLIT ON JOBS BY PURCHASER TO MAKE UNITS #F, #F1/2, #F1/4, #F1/8.

NOTE:-- ALTERNATE COURSES ARE SHOWN IN THE ABOVE TYPICAL WALL AND PILASTER LAYOUT PLANS

SPEEDTILE DETAIL



(Continued from page 23)

PROCEDURE IN ESTIMATING QUANTITIES FOR 13 $\frac{1}{4}$ " SPEEDTILE WALL

For quantities of jambs and corners in a 13 $\frac{1}{4}$ " Speedtile wall, proceed as above for an eight inch wall, but to determine the number of Speedtile stretchers multiply the total net area by 3.38 pieces per square foot. As a wall of this thickness is comprised of one Speedtile Stretcher and one split Speedtile Stretcher, one third of the total required stretchers will be No. 7 Stretchers or No. 7 fractions, which are the same as the regular stretcher and fractions except that they are scored down the middle for splitting.

How to Order: Refer to the detail of units and order by name and number, specifying the face finish required. With regard to corners and jambs, it is to be noted by referring to sketches on page 24, that these are different than in the eight inch wall. For instance, a corner will require an A block only instead of a complete No. 8 corner. The jambs may be type No. 5 and No. 6 spread apart, with a split three quarter stretcher and a split one quarter stretcher respectively between them, or units "A" and "C" only may be required, depending on the detail of the

window frame or door frame. In ordering, then, it should be indicated that the tile are for use in a 13 $\frac{1}{4}$ " wall, and the detail block, stretchers and fractions ordered by their number as indicated in catalogue.

DETAILS OF SPEEDTILE CONSTRUCTION

In order to make a satisfactory job, it is important in all cases that the mason make a dry lay-out all the way around the building, that is, without mortar, before starting to build up the leads at the corners. This is necessary to determine in which position the corner blocks are to be placed, and to so allow for variation of joints that it will not be necessary to close with a quarter or half stretcher, which are unsightly in an exposed wall.

Short walls and offsets should be laid out to fit the tile as nearly as possible. Small discrepancies can be overcome in longer walls by varying the joints slightly, or by closing at one corner with a three quarter unit, No. 7A, or both by use of a three quarter unit and varying mortar joint. For buildings which have not a pre-determined tile lay-out, the position of the corner block, together with the variation of the joints and use of fractional closers, permits the construction of medium to long walls of almost any length.

LAYING OUT THE WORK

Care should be taken to lay out all walls, offsets, angles, pilasters, openings for doors and windows, etc., in such a way as to simplify the tile assembly as much as possible, using standard Stretcher Tile, Fractions, Corners, and Jamb units.

It is usually wise to figure the overall length of a wall at a multiple of $12\frac{1}{4}$ " (being the length of a stretcher plus one vertical joint) plus $10\frac{1}{8}$ " (which is the long dimension of a corner plus one vertical joint) or plus $4\frac{1}{8}$ " (the small face of a corner tile plus one joint). To the other end of the wall (the multiple of $12\frac{1}{4}$ plus one corner face plus one joint) add one corner face either $9\frac{3}{4}$ " or $3\frac{3}{4}$ ". It is essential to chase the bond all the way around the building so as to close properly at the place of beginning.

Care should be taken to centre pilasters and window and door openings on the same basis.

TILE JAMBS FOR WINDOWS AND DOORS

Special jamb units are available. Type No. 3 and No. 4 Jambs are used in alternating courses in conjunction with wood frames. Type No. 3 and No. 4 are easily adaptable to box frames by shortening the inside unit on the job. Type No. 5 and No. 6 Jambs are available for steel sash. The purchaser should specify which type is required.

Frames of windows and doors should be made to conform closely to full masonry opening widths between jamb tile. The height of windows and doors should also conform to the masonry opening derived by calculation with the correct coursing (generally one course and one horizontal joint equalling $5\frac{1}{4}$ inches, 5" tile plus $\frac{1}{4}$ " joint).

Determining Width of Masonry Openings of Windows and Doors: If in any one course a small jamb is to be used on one side of the opening, and a large jamb is to be used on the other side of the opening, the minimum width opening will be $10\frac{5}{8}$ ". With this arrangement of jambs, the width of the opening may be $10\frac{5}{8}$ " or any multiple of $12\frac{1}{4}$ " plus $10\frac{5}{8}$ ". For example $4 \times 12\frac{1}{4}$ plus $10\frac{5}{8}$ " equals $59\frac{5}{8}$ ".

If in any one course, two small jambs, or two large jambs are used, one on each side of the opening, the width of the opening may be $4\frac{5}{8}$ " or any multiple of $12\frac{1}{4}$ " plus $4\frac{5}{8}$ ". For example, $1 \times 12\frac{1}{4}$ plus $4\frac{5}{8}$ equals $16\frac{7}{8}$ ". Where necessary, the width of the openings, derived as above, may be increased 3" by closing with a three quarter stretcher unit No. 1A. This procedure, however, makes the predetermined location of centres of openings more complicated to calculate, and does not produce quite as desirable bond as when using full size units.

Determining Height of Masonry Openings: From the standpoint of economy of labor with ideal mechanical conditions and general appearance of the

wall, it will be found best to lay up the tile at one course of tile, plus one joint, equalling $5\frac{1}{4}$ " (5" tile plus $\frac{1}{4}$ " joint).

The height of masonry openings will then be some multiple of $5\frac{1}{4}$ " when precast concrete sill, and concrete lintel run on the wall, or angle iron lintel is used. If a tile lintel, or precast concrete lintel is used in conjunction with a concrete sill, add $\frac{1}{4}$ " to the above multiple of $5\frac{1}{4}$ ". If a brick sill is used instead of a concrete sill, add to dimensions obtained as above, $\frac{3}{4}$ ", this being the projection of the wood sill below the top of the course of tile in which the brick sill is located, and occurs by reason that the height of the brick on edge is less than the height of the tile.

Location of Center of Openings: Start the layout at any given corner. To one corner face plus one vertical joint ($4\frac{1}{8}$ " or $10\frac{1}{8}$ "") add some multiple of $12\frac{1}{4}$ ", add one small jamb, $3\frac{3}{4}$ " or one large jamb $9\frac{3}{4}$ " (add whichever jamb produces most desirable center for the opening) add one half of the width of the opening being located.

Determining Dimension Between Center of Openings: Add to one half the width of the opening last located, one small jamb and one joint, that is $4\frac{1}{8}$ ", or one large jamb and one joint, that is $10\frac{1}{8}$ " (use whichever jamb produces the most desirable center of next opening), add some multiple of $12\frac{1}{4}$ " add one small jamb, $3\frac{3}{4}$ ", or one large jamb, $9\frac{3}{4}$ ", add one half of the width of the opening being located, (use either the large jamb or small jamb, whichever produces the most desirable center for the opening being located). When locating openings, care should be taken that the width of masonry between openings is not less than the minimum which is $19\frac{7}{8}$ ".

Pilaster Construction: Pilasters are easily constructed using standard Speedtile and fittings. Steel columns can be readily accommodated in pilasters. If desired, pilasters can also be built to any size and shape using brick bonded into the Speedtile walls. Just as in brickwork, care should be taken to design all features (pilasters, openings, and wall dimensions) to suit the tile length and height and the mortar joint.

LAYING SPEEDTILE

It is recommended that all important Speedtile jobs be laid in accordance with manufacturers specifications. These specifications covering materials, procedure and technique, will be gladly furnished on request.



Potato Warehouse of Interlocking Tile.
F. W. Pirie Co. Ltd.
Grand Falls, N. B.

SEWER PIPE

Sewer pipe and its many uses are well-known. Being vitrified and smooth on the inside surface allows liquid to flow along with a minimum of loss in velocity. Liquid does not penetrate its vitrified face, and the bell end joints prevent leakage. Vitrified sewer pipe is not affected by alkaline soils, and

has considerably longer life than other types of pipe. It is more resistant than metal or concrete pipe to acids and alkalines, and thus is superior for sewage disposal and septic drains.

We manufacture Vitrified Salt Glazed Sewer Pipe in the following sizes:



Straight Pipe

Size	Length per Piece	Wt. per ft.	Size	Length per Piece	Wt. per ft.
4-inch	2-feet	9 lbs.	9-inch	2-feet	27½ lbs.
5-inch	2-feet	12½ lbs.	10-inch	2-feet	34½ lbs.
6-inch	2-feet	14½ lbs.	12-inch	2-feet	42 lbs.
8-inch	2-feet	23½ lbs.	15-inch	2-feet	62½ lbs.

Order Sewer Pipe by the Lineal Foot—The following standard Sewer Pipe Fittings are carried in stock:—

T BRANCH or Single Square Jct. T and Y Branch Sizes				Y BRANCH or Single Bevel Jct. T and Y Branch Sizes				Double T Branch or Double Square Jct.	
Double Y Branch or Double Bevel Jcts.				Double T and Double Y Branch Sizes				Increaser Sizes	
Pipe Size	Spur Size	Pipe Size	Spur Size	Pipe Size	Spur Size	Pipe Size	Spur Size	4 inch to 6 inch	
4 inch	4 inch	10 inch	4 inch	4 inch	4 inch	6 "	4 "	6 " to 8 "	
6 "	4 "	10 "	6 "	6 "	4 "	8 "	6 "	8 " to 10 "	
6 "	6 "	10 "	8 "	8 "	6 "	10 "	8 "	10 " to 12 "	
8 "	4 "	12 "	10 "	8 "	6 "				
8 "	6 "	12 "	4 "	8 "	8 "				
8 "	8 "	12 "	6 "						
9 "	4 "	12 "	8 "						
9 "	6 "	12 "	10 "						
9 "	8 "	12 "	12 "						
9 "	9 "								

Note: When ordering Y or T fittings, specify size of pipe and size of spur. For example, if a Y branch consisting of an 8" pipe and a 6" spur is required, order an 8 x 6 Y branch.

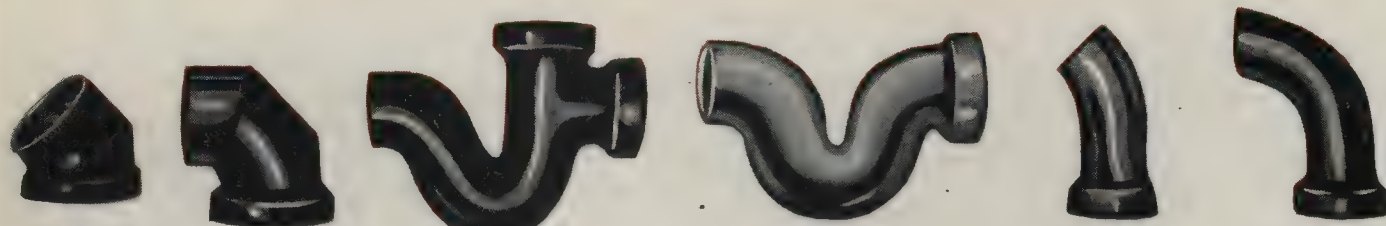
Note: When order Double Y or T Branches specify the size of the pipe and size of the spurs. For example, if a Double T Branch, consisting of 8 inch pipe and 6 inch spurs, is required, order an 8 x 6 x 6 Double T Branch.

Note: Socket is on the smaller end of Increaser.

Socket is on the larger end of Reducers.

Note: While it is possible to have special fittings made, standard fittings are usually adequate for all purposes. For instance, if a Double Y or T Branch were required with spur dimensions differing from each other, order

standard Double Y or T Branches, together with one reducer to suit requirement. For example, if a Double Y Branch 8" pipe and one 6" spur and one 4" spur is required, order one 8 x 6 x 6 Double Y Branch, and one 6" to 4" Reducer.



Cut 1/2 Bend
or Curve

Cut 1/4 Bend

Hand Hole Trap

Running Trap

1/2 or 45°
Bend or Curve

1/4 or 90°
Bend or Elbow

Cut Bend Sizes

8 inch Pipe 10 inch Pipe
9 " Pipe 12 " Pipe

Hand Hole Trap Sizes

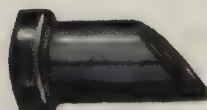
4 inch Pipe
6 " Pipe

Running Trap Sizes

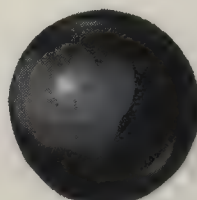
4 inch Pipe
6 " Pipe

Bend Sizes

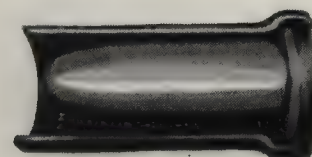
4 inch Pipe
6 " Pipe



SLANT



STOPPER



CHANNEL

Slant Sizes

4 Inch
6 "
8 "
9 "
10 "
12 "

Stopper Sizes

4 Inch
6 "
8 "
9 "
10 "
12 "

Channel Sizes

4 Inch
6 "
8 "
9 "
10 "
12 "



Perforated Bell End Pipe

Perforated bell end pipe as illustrated, can be supplied in the same size as sewer pipe. Six inch perforated pipe is the size most commonly used for highway and airport drainage, and a good stock of this is carried at all times.

CAPACITY COMPARISONS

Velocities and discharge capacities of Clay Pipe are shown below as compared to that of other types of drainage pipe. Figures are based on a two foot slope per one hundred lineal feet.

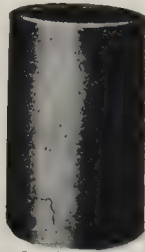
Size	Discharge per Minute	Velocity per Second
Six Inch Clay Pipe	124 Gallons	1.4 feet
Six Inch Concrete Pipe	99 Gallons	1.12 feet
6" Corrugated Metal Pipe	68 Gallons	0.71 feet

Note. To avoid errors and delay please use the name indicated beneath the illustrations when ordering sewer pipe fittings.

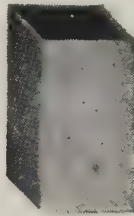
FLUE LINING

We manufacture strong, weather-resistant Flue Lining in the following approximate weights and sizes:

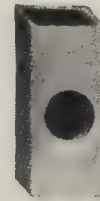
Outside Size	Inside Size	Weight per Ft.	Length
8"x 8"	6½"x 6½"	16 pounds	2 feet
8"x 12"	6½"x 10½"	25 pounds	2 feet
12"x 12"	10½"x 10½"	35½ pounds	2 feet
12"x 15¼"	10¼"x 14"	47 pounds	2 feet



Round Flue Lining



Rectangular Flue Lining



Chimney Tops

Round flue lining supplied in 6", 8", 10", 12" size 2 ft. lengths.

Flue lining is preferable to brick for lining a flue because:

As an independent lining, it is not tied to the outside of the flue, and thus may expand and contract, due to temperature change, without having any

tendency to cause weakening of the outside structure.

Flue lining has a smooth surface, and does not absorb tar and pitch from flue gasses; hence a chimney with a minimum of fire hazard.

Flue lining butted end to end, without mortar in the joints, form a monolithic wall which gives better draft than would the same size opening if mortar joints were exposed as in brick lining construction. Small eddy currents of air near joints not fully filled reduce the draft in flues where flue lining

is not used. Therefore, flues lined with flue lining require less space for proper draft than do flues where lining is not used and thus take up less valuable floor space.

It is more cheaply installed than brick linings.

Chimney tops are supplied in 8" x 8", 8" x 12" and 12" x 12" sizes.

DRAINAGE TILE

Agricultural drainage tile are made at both our Chipman and Elmsdale plants and kept in stock at all times in the following sizes 3", 4", 6" and 8". Drain tile are approximately 1 foot in length. They are mechanically sound in construction, of uniform size, and properly burned.

Our 6" tile has been tested by the New Brunswick Government for use in road under-drainage, and in these tests the crushing strength ranged be-

stress the value of drainage for farm land of the following types:

Cultivated areas with fair surface drainage, but exhibiting a heavy clay subsoil.

Heavy clay soils with very little or no surface drainage.

Rolling areas with an impervious subsoil.

Areas large and small, saturated long enough



Straight Pipe



T Branch



Y Branch



Elbow

tween 1800 for light-burned, and 2800 for hard-burned tile. Tile of 1400 pounds strength is ample for road under-drainage, and our tile thus proved to be from 1½ to 2 times as strong as required.

Drainage tile has many uses, some of which are: Road under-drainage, farm under drainage, and drainage around basement and foundation walls.

Agricultural experts from all parts of the globe

each year to destroy the physical condition of the soil or interfere with spring seeding and harvesting operations.

Perforated bell end pipe as illustrated, can be supplied in the same size as sewer pipe. Six inch perforated pipe is the size most commonly used for highway and airport drainage, and a good stock of this is carried at all times.

BENEFITS OF FARM UNDERDRAINAGE

Many farmers add to their acreage of tile drained land year after year, but many more farmers neglect this practice. Consider, then, some aspects of under-drainage:

It removes ground water that would otherwise keep the land waterlogged during the early spring planting and sowing period.

Takes off storm water via drains rather than over the surface.

Allows moisture to move through the soil carrying to the roots of the plants the plant food provided by expensive fertilizers.

Allows air to enter the soil, thereby promoting the chemical actions necessary to proper utilization of plant food.

Under-drainage improves the condition of the soil for early spring working and late harvesting of crops. It enables the soil to become warmed for plant growth; and, at the same time, allows moisture from the subsoil, by capillary attraction, to reach the plant roots through the growing season.

Weeds are more easily controlled.

Winter killing is decreased.

Increases yield per acre and enables more intensive cultivation of a smaller acreage.

Tile drainage is an investment that gives direct tangible returns.

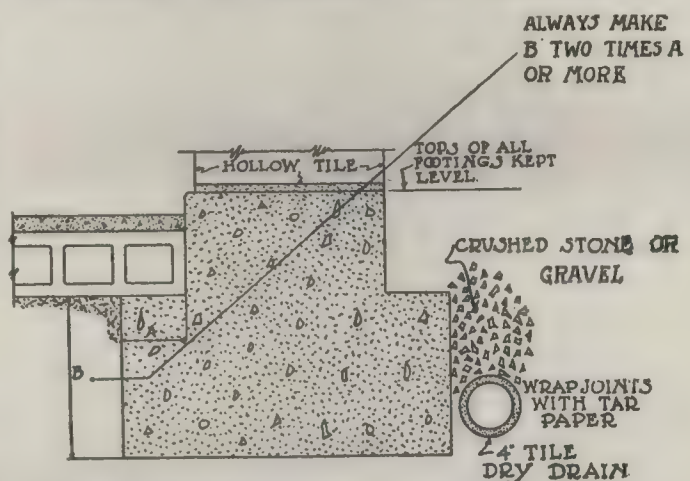
The usual practise in clay soils is to dig ditches from three to four feet deep, and about thirty-five feet apart. In lighter soils, ditches may be $3\frac{1}{2}$ feet deep, and sixty or seventy feet apart. Ditches should be as narrow as possible and uniformly graded. Tile drainage for 3" tile will cost about $6\frac{1}{2}$ c per foot: that is, $3\frac{1}{2}$ c for the tile and 3c for labor. The cost of 3" tile per acre would be as follows:

30 feet apart—1450 feet at $6\frac{1}{2}$ c	\$93.50
40 feet apart—1090 feet at $6\frac{1}{2}$ c	70.80
50 feet apart— 870 feet at $6\frac{1}{2}$ c	56.50
60 feet apart— 730 feet at $6\frac{1}{2}$ c	47.40
70 feet apart— 620 feet at $6\frac{1}{2}$ c	40.20

Further information regarding farm under-drainage may be had from the Departments of Agriculture of Nova Scotia, New Brunswick and Prince Edward Island.

PROPER WALL DRAINAGE

The importance of proper wall drainage can not be too strongly emphasized. It not only provides a safeguard against heaving, but is an essential in obtaining a dry basement in areas where there is



the slightest possibility of water around the foundations at any time of the year.

There are two alternative means of obtaining this. The first method is to entirely cover the outside of the foundation wall and carry under the floor with a waterproof membrane. This operation is very costly.

The second method which is illustrated above, is of negligible cost. It embodies the running of a 4" drain tile all around the foundation below the floor level. This tile should be suitably graded and have an outlet in the sewer or positive drain. It is desirable also to apply a brush application of an approved foundation coating to foundation walls from the bottom to the grade line.

The above illustration is of the modern type of basement with tile constructed basement floor and tile foundation walls.

IT PAYS TO PROPERLY DRAIN ALL TYPES OF FOUNDATION WALLS

Ditcher at work. In many parts of the Maritime Provinces equipment such as this is available to farmers. Other practical aid is given, and the farmer contemplating tile under-drainage would be well advised to consult the local Provincial Department of Agriculture.



AGED LIME PUTTY

Our OLD FASHIONED AGED LIME PUTTY is vastly superior to Hydrated Lime or Lime slaked on the job, for mortar, plaster, putty coat, and stucco.

Under 'MORTAR' on page 32 we have given you the reasons why only a high lime mortar should be used for brickwork, and wherever possible we strongly recommend that our Aged Lime Putty be used—and for the following reasons:

- (1) Only the best quality of freshly burned rock lime is used.
- (2) The lime is slaked before it has a chance to 'air slake.'
- (3) The important process of slaking is carried out by experienced workmen who do not 'burn' or 'drown' the lime, as so often happens when lime is slaked on the job.
- (4) The lime putty is screened before going into the ageing bins.
- (5) The lime putty is aged in bins until it is perfectly cured and ready for use. This is by far the most important part of the process, because
 - (a) Ageing increases the plasticity of the putty and gives it greater sand carrying capacity, which in turn reduces the shrinkage of the mortar.
 - (b) Ageing 'shrinks' the lime putty so that one volume of aged putty is equal to a far greater volume of newly slaked or hydrated lime putty.
 - (c) The ageing process insures that all particles are thoroughly slaked and this means that mortar made from it will have less volume change.
 - (d) Aged Lime Putty has greater work-

ability, which means greater speed in laying brick and what is far more important, better filled and tight joints.

Lime Mortar: In addition to 'Aged Lime Putty' we supply machine mixed *Sand Lime Mortar*. The sand and aged lime putty are thoroughly mixed by machinery at our plant, and delivered on the job as required. Our Sanded Lime Mortar is composed of $3\frac{1}{2}$ volumes of sand, to 1 volume of Aged Lime Putty. For ordinary work we recommend that this mortar be gauged with cement, as follows:

Add one volume of cement to from 6 to $7\frac{1}{2}$ volumes of Aged Lime Mortar. This will give a mortar composed as follows: 1 volume cement, 2 volumes Aged Lime Putty, $6-7\frac{1}{2}$ volumes sand.

TO THE ARCHITECT, OWNER, AND CONTRACTOR

Besides being a quality product, our Aged Lime Putty offers the following advantages:

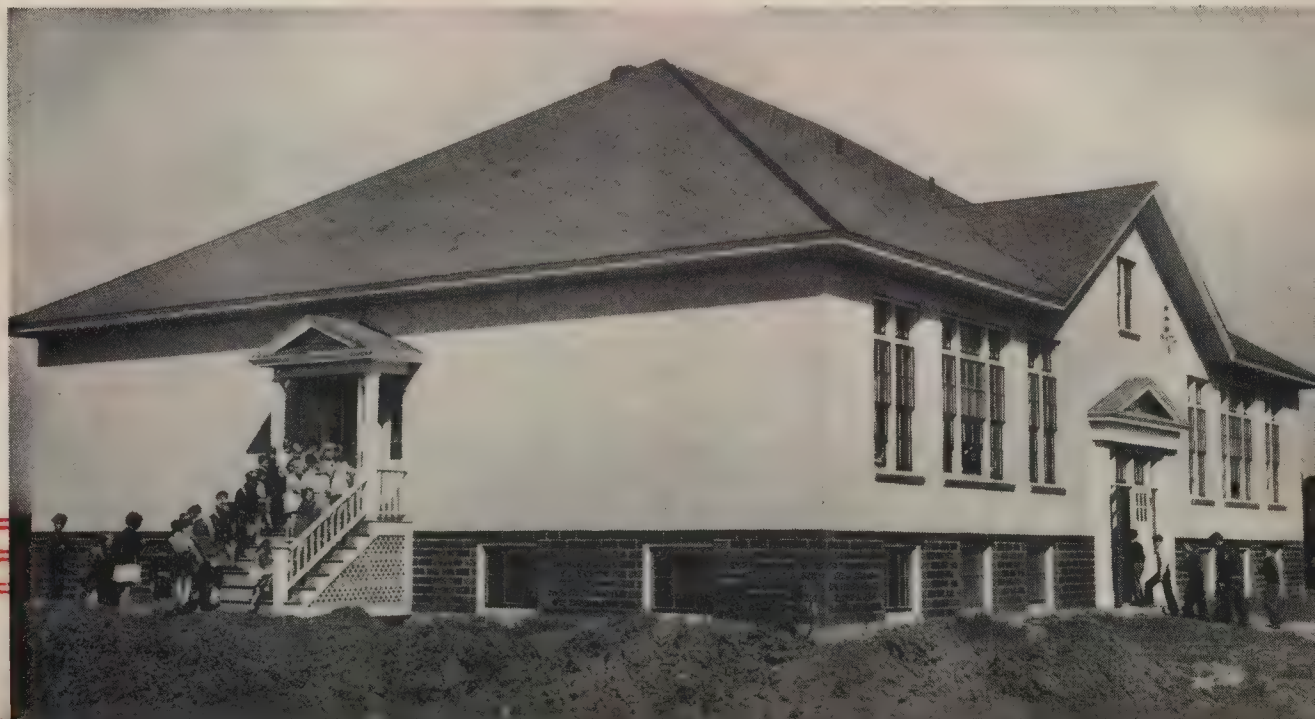
- It economizes in space,
- Saves labor and supervision,
- Speeds up work,
- Eliminates waste caused by over supply or shortage and deterioration.
- No slaking bins required.
- Less loss from droppings.

DELIVERY

Delivery of ready mixed sand lime mortar is usually made in ordinary dump body trucks.

Lime Putty is usually delivered in casks containing from four to six cubic feet.

Stucco and Speedtile are an ideal combination for schools such as this one at McClure Mills, N. S. Pleasing in appearance, they are economical to build and assure walls that are permanent, fireproof and clean.



MORTAR

The solution to the "leaking wall" problem.

During the past ten years volumes have been written on the subject of mortar, and many thousands of dollars have been spent on research and testing of various mortar combinations with brick and other materials.

Why all this testing and research work? The answer is that about thirty-five years ago some buildings of masonry materials, both brick and stone, began to leak, and architects, engineers, contractors and building material manufacturers, gradually became alarmed and wanted to know the reason for this.

Let us look back to about the turn of the century. Up to that time the only material used generally for masonry mortar was a mixture of lime and sand. Then builders began to use a small amount of Portland cement as a gauging material in the mortar. The purpose of the cement was to accelerate the hardening of the mortar, and it achieved that result. A theory developed, induced perhaps by the aggressive promotional and sales efforts of the cement interests, that because a little worked well, more would work better. Architects and builders began stepping up the cement content in increasing quantities until they quickly reached that specification which has been familiar to all of us for so long, viz: one part Portland cement and three parts sand. Some builders allowed five to ten per cent lime to be used with the cement mortar, but others had been so thoroughly sold on high strength mortars, that they considered lime a dangerous material and refused to allow it in any of their construction. This brings us to the first important point: Over a period of years lime had been crowd-

ed out of the field as an important ingredient in masonry mortars.

While this change was in process, new and unforeseen developments were taking place. Waterproofing materials were first introduced about 1912. Many of you will recall how the builders of the country reached out for those materials. Sales of waterproofings, of one kind or another, developed rapidly. That was the beginning of a recognition that there was a leaking wall problem, but—*there was no need for waterproofing materials until after lime had been crowded out of the field*, or its use had been reduced to such small quantities that its inherent properties were rendered ineffective. *There was no leaking wall problem thirty-five years ago.*

The builders of the country were depending upon waterproofing materials to correct their problem, but soon realized that they could no longer depend upon those materials.

Curiously enough, and unfortunately for the builders, it seems the more they tried to correct their trouble by changing the mortar, the worse their trouble became. Finally, in 1924 or 1925, it reached major proportions. Building owners of the country were spending millions of dollars annually to repair leaking masonry and consequent damages to interiors.

This problem of leaking walls was by no means local. The same thing happened all over Canada, United States, England, Germany, Sweden and many other countries.

In the Blackhawk Apartments in Chicago one quarter million dollars was expended for such repairs before the structures were a year old. In the Graybar office building in New York City, one hundred thousand dollars was spent to repair the walls before the



first tenant ever moved into the building.

Because of these conditions architects of the country rose up indignantly and demanded an answer to the problem, and right here the face brick industry deserves some credit. They heard those demands. It was they who put the machinery in motion which has given us our present day broad understanding of the subject of leaking masonry. That insistent demand from architects finally resulted in throwing all materials, lime, cement, masonry cements, bricks and waterproofings into the high court of scientific study—the laboratory.

As a result, much research has been done in various well known and reliable laboratories, and today we know much more about the leaky wall problem and about mortars than we did a few years ago. We now know the properties a mortar must possess in high degree if we are to be rewarded with sound, durable, water-tight brickwork, and as a result of that new knowledge there is a strong definite trend back to a lime mortar gauged with Portland cement; and as this new knowledge becomes more broadly disseminated, the trend is becoming stronger. Since no section of the country was free from this problem, all sections are gradually falling into the line of march back to lime.

Cement mortar is stronger than lime mortar. However, lime mortar tempered with cement is strong enough for practically all types of masonry; in fact, there is less need for strength in mortar today than there was thirty-five years ago, — before structural steel came into popular use, because at that time practically all masonry walls were load-bearing.

It may be well to state here some of the reasons why cement mortar does not make for good brickwork: Cement mortar has a high shrinkage and expands and contracts, due to both changes in moisture and temperature, about twice as much as lime mortar. Cement mortar lacks the plasticity of lime mortar and therefore does not lend itself so readily to securing that all important feature "Tight Joints."

Since masonry walls started to leak, the brick themselves have come in for considerable criticism. Many people have laid the entire blame on the brick. It is true, the brick may have been at fault in some instances, but as far as leakage is concerned, we think it was very few, indeed. We should be pleased to demonstrate to any one the fact that *our brick do not leak*.

An interesting investigation on buildings of masonry materials has been undertaken in Sweden. This country has a climate very similar to ours, and conditions along the coast are very severe. Most of their old buildings, of brick or stone, built previous to 1900, were standing up well, while a large number of the buildings built from 1900 on were going to pieces and leaking badly. The problem became

so serious that the Government ordered an inquiry and a thorough investigation was carried on by qualified men. This investigation included an examination of the old buildings which were standing up, and the new buildings which were going to pieces. Pictures were taken, and notes made on the type of construction, materials, mortar, exposure, etc. In most instances, they found that the jobs that were standing up were built of brick or stone, laid with lime mortar, and the walls which were giving trouble, even though constructed at a later date were the ones built with cement mortar.

Rock lime, properly burned (the same mortar that was used in the older building, some of which have not even been repointed in centuries), slacked and aged, mixed with good sand, and gauged with cement, makes a good mortar. Could anything be simpler. There is nothing very complicated about it —and it is the *cheapest* mortar there is. In spite of the fact, much of the mortar used today, mortar having a high cement content, is more expensive and at the same time very inferior.

Mortar made from properly slacked lime putty and sand is the only mortar which has proven good by satisfactorily withstanding the test of time for hundreds of years. This is an established fact; and, if you care to do some investigating yourself, you can see many jobs in Halifax or Saint John from fifty to one hundred years old which are in better shape than many jobs built during the past twenty years.

The Journal of the Royal Institute of British Architects cites an interesting case in which repointing with cement mortar actually destroyed brickwork that had been standing for 900 years.

A recommendable mortar specification, a mortar that has proven very satisfactory in the execution of watertight masonry, that withstands erosion satisfactorily, that is very workable, and at the same time is of ample strength, is that recommended by Professor Walter C. Voss of Massachusetts Institute of Technology, a well known authority on construction and materials.

In 1937 we sent some of our Chipman brick to Professor Voss for the purpose of having them used with various mortar combinations, in order to determine the most suitable mortar. He found that *a mortar composed of two volumes of slaked lime putty to one volume of cement and seven to seven and one-half volumes of sand*, bonded well with our brick, and recommended this mortar.

One very important point in regard to mortar is the mixing. Mortar must be thoroughly mixed by experienced workmen—otherwise some of the mortar will be over-sanded, while other parts will be under-sanded—even when the correct proportions are put in the batch.

BRICK WORK

Good brickwork is a combination of—

- (1) Good Brick
- (2) Good Mortar
- (3) Good Workmanship
- (4) Good Design

Good Brick

We feel confident that we can supply brick as good as can be obtained anywhere on this continent, and we will guarantee our face brick to stand all weather conditions if used properly.

Good Workmanship

The factor of workmanship is of vital importance in obtaining good brickwork. You can usually depend on good workmanship if the workmen are supplied with the proper materials: that is, brick and mortar. The contractor shares the responsibility with the bricklayer. The cost of doing a thoroughly good job of brickwork is often greatly exaggerated, but perhaps this has been due to some extent to use of harsh working mortars which make for slow and poor work.

The most important thing is for all head joints to be completely filled with mortar. Brick should be shoved into place. We also recommend that all face brick be back-plastered, as this back-plaster takes care of any joints which might not be completely filled, and is cheap insurance for a dry wall. It has been proven that 4" of brick, back-plastered is as water resistant as 8" of brickwork not back-plastered.

Good Mortar

The subject of mortar is dealt with on page 30 of our catalogue.

Good Design

Proper design is of great importance if a building is to withstand the elements for any great period of time. One of the most vulnerable parts of present day structures is the parapet wall. They should be avoided whenever possible, but when it is impossible to do this, great care should be taken in their design. Parapet walls must be completely covered at the top with some material such as copper, to avoid the possibility of dampness seeping down through the parapet wall. Where stone or concrete parapets are used, they must be protected with a wide overhang and a drip; and in addition to this, flashing must be applied under the coping, as it is almost impossible to keep these types of copings water-tight. Parapet walls should also be flashed through just above the roof line, with weep holes opening on the roof side. Never paint the back of a parapet wall with bituminous material. This prevents absorption from the back, and seals in the moisture; and instead of protecting the parapet wall, it accelerates disintegration since the moisture cannot escape, and something has to give when ice is formed.

Copings, window sills, and projecting belt courses come in greater contact with rain and snow than does the vertical face of the wall, so that opportunity for moisture penetration is greater, requiring special precautions. If the material used for trim is not impervious to moisture, or if the joints cannot be made tight, it is absolutely necessary to



A section of the Lady Beaverbrook Gymnasium, University of New Brunswick, Fredericton. Chipman brick laid in interesting Flemish Bond demonstrate the pleasing result when quality brick, expert workmanship and excellent design are combined.

separate the trim from the masonry with suitable flashing. Flashings either above or immediately below window sills are eminently important whenever porous, natural or cast stone are used. The spandrel beams of all buildings exposed to driving rainstorms need to be protected with a suitable waterproofing treatment. It is good practise to flash over all masonry openings.

Roofing and Gutters: Buildings should be so designed that water from roofs will not run down over brick walls, and, particularly, water from melting snow should not be allowed to form ice on brickwork. Pitched roofs should have sufficient overhang and proper drips. Gutters and down spouts should be properly designed and always kept in a state of good repair. Leaky downspouts and gutters cause untold damage to masonry walls.

Chimneys: The severe exposure at the top of the chimney, combined with the sulphurous combustion gases from the chimney makes unusual treat-

ment necessary. A lead coated copper pan extending over the top and down over the wall inside and out for several inches is recommended.

Waterproofing: We do not recommend that brick walls be coated with waterproofing materials which seal the face of the wall. If there is any moisture in the wall when this waterproofing is applied, it seals it in and tends to disintegrate the wall.

Note: Regarding one point that is often asked: "Should brick be moistened before laying?" A very porous brick, like dry pressed brick, should be sprayed with water before laying, but it is not necessary to wet other grades of our brick, except on very hot sunny days, when it is advisable to spray them lightly.

Thickness of Joints: Regarding thickness of joints, we recommend that our brick be laid as follows: Four bricks and four joints to equal $10\frac{1}{4}$ " in height. No joint either vertical or horizontal to exceed 3-8".



Tile Buildings and Silos on the Farm of A. V. Cook, Waterville, N. S.

THERE IS A TILE FOR EVERY FARM BUILDING PURPOSE

Structural Clay Tile are rapidly gaining favour as the most practical and economical material for farm buildings. Speedtile, Interlocking Tile and Silo Tile compare favourably in cost with frame construction, and over a period of years, the savings in upkeep, fire insurance, depreciation, etc., more than

offset the slightly higher initial cost.

Speedtile and Interlocking Tile are ideal for barns, poultry houses, hog houses, cribs, pump houses, work shops, potato and apple warehouses, garages, residences and all types of foundations. Tile buildings are permanent, fire safe, easy to clean and convenient. They add to the beauty and value of any farm.

BRICK HOMES

IT COSTS LESS TO OWN A BRICK HOME

Without doubt, the most fascinating undertaking that a family can attempt, is that of building and owning their own home. It is the wish of practically every family to eventually do this. It is an inborn desire dating back to the early settlers, when home owning was tantamount to existence, and has from this early seed, grown to become an inherent characteristic of the average Canadian family. Today, home ownership is considered the very foundation of a sound economic and social system.

Of major importance is the building material used in the construction of your home, and the most important phase of this is the construction of the exterior wall. Considering it from a technical standpoint, you want strength, ability to withstand wind, rain and snow, maximum ability to keep warm air out in the summer, and warm air in during the winter. You will want walls that are permanent as well as absolutely fireproof.

Because owning your own home is probably the most important investment that you will ever make, it demands careful planning, a study of location, some knowledge of what is permanent, safe construction, and an understanding of financing. Whether you be a buyer of a home already constructed, or whether you want the interesting and all absorbing adventure of building your own home, you will want to carefully investigate and consider all of these questions.

Brick is one of the oldest and still the best building material known to man today. Brick walls have qualities of permanence, insulation value, low maintenance, economy and beauty in colours and textures unsurpassed by any other materials. They are the utmost in fire safety and fire resistance. From the standpoint of advantages and economies, then, brick assures the greatest in building values.

There has been an erroneous idea as to the difference in cost between brick and non permanent construction. Many people in the past have considered and desired brick, but the prevailing belief concerning the cost has prevented these proposed home owners from even enquiring into the matter. While the initial cost of a brick house over frame is slightly higher (and in most cases it is less than 10 per cent) this slight addition is more than offset over a short period of time.

COMPARATIVE COST OF OWNING (10 years)

Frame House	
Cost of house.....	\$6000.00
Insurance on house at 2.66 per M per year.....	159.60
Insurance on contents, \$2,000 at 2.66 per M per year	53.20
Depreciation 1% annually	600.00
Maintenance 2% annually.....	1200.00
Total cost of frame house for ten year period.....	\$8102.80

Brick House	
Cost of house.....	\$6420.00
Interest at 5% on \$420 extra cost of house.....	210.00
Insurance on house at 2.33 per M per year.....	139.80
Insurance on contents, \$2000 at 2.33 per M per year	46.60
Depreciation ½ of 1% per year.....	321.00
Maintenance ½ of 1% per year.....	321.00
Total cost of brick house for ten year period.....	\$7458.40
ACTUAL SAVING OF BRICK HOUSE FOR TEN YEAR PERIOD	\$ 644.40

COMPARATIVE VALUE AT END OF TEN YEARS

Frame House	
Original Cost.....	\$6000.00
Depreciation during 10 year period at \$60.00.....	600.00
Value of frame house after ten years.....	\$5400.00
Brick House	
Original Cost.....	\$6420.00
Depreciation during 10 year period at \$32.10.....	321.00
Value of brick house after ten years.....	\$6099.00
VALUE OF BRICK HOUSE OVER FRAME AT END OF TEN YEAR PERIOD.....	\$ 699.00

	Advantages	Economies
FIRE RESISTANCE	Brick can not burn.	Lower insurance rates <i>mean dollars saved.</i>
PERMANENCE	Brick will neither rot nor rust.	Less replacement costs <i>mean dollars saved.</i>
BEAUTY	Brick colours are natural, enhancing with age.	Periodic paintings eliminated or <i>reduced mean dollars saved.</i>
WEATHER RESISTANCE	Brick are waterproof, unaffected by frost. No drafts nor dampness.	Healthful living and less fuel re- quirements <i>mean dollars saved.</i>
CLEANLINESS	Vermin proof and free from dust seeping through cracks and checks	Healthful living conditions and con- venience <i>mean dollars saved.</i>
RESALE VALUE	Durability, permanence and beauty assured.	Less building depreciation <i>means dollars saved.</i>

HOME FIRES

Someone has aptly said that a house is not a home until a fire has been kindled in the fireplace. Once that is done, and the flames crackle and leap among the logs, they seem to say, "Stay in tonight and enjoy the comforts of home."

Before a glowing fire, both family and friends find a welcome relief from the work and worry of the day. After the evening meal, pleasant relaxation comes with a friendly game or a lively discussion of this and that, while the youngsters—sometimes, too, those not so young—make much of popping corn, toasting marshmallows and roasting chestnuts among the embers.

And when friends are not about, a good book and a warm fire are wonderful companions with which to pass the time.

On the practical side, the fireplace will be ex-

Proper Fireplace Construction

The location of the fireplace in the room is of greatest importance to its enjoyment. As a highly ornamental feature of the home, it should be given a prominent position; but it should not be in the line of travel through the room, near the entrance door, nor where a cross draft may sweep it. If it is placed between entrances to the room, doors should be provided so that the draft is not affected. The far end of the room is one of the best locations for the fireplace.

A GOOD DRAFT

Without a good draft, no fireplace can be really satisfactory. And a good draft depends upon the



ceedingly welcome in the early days of spring and the late days of autumn, although no one expects it to combat effectively the winter's cold, except in very moderate climates. But from every point of view, a new home should have at least one good fireplace, for while modern heating systems may adequately solve the problem of regular and even temperatures in the rooms, they cannot bring the good fellowship radiated by an open fire.

Brick is the ideal material to use, for no other material is so good or so appropriate for fireplace use. Having stood the test of flame in their making, face brick defy it in their use. And the wide variety of colors—creams, buffs, tans, browns, reds, purples, and even gunmetal blacks—offer a choice that assures harmony with any setting.

proper relation of fireplace openings to the size of the flue, the chimney height, and the position of the throat, which determines the important matter of the wind shelf. Whatever the size of the fireplace, the actual inside area of the flue should be approximately, but not less than, one-tenth the area of the fireplace opening, except possibly where a strong draft due to an exceptionally high chimney may require less flue area. Each fireplace should have its own flue, carried full size to the top of the chimney, without connections of any kind; and the chimney should be carried at least two feet above the highest point of the roof.

For wood-burning fireplaces a low, broad opening will direct the smoke up the chimney better than a narrow, high one such as is frequently used for coal

grates. With arched openings, the average height is used in figuring the area of the opening. For convenience, a table of commercial flue linings is given, showing inside areas with which you may compare a tenth of your opening area. Use the lining of which the net area is next above the actual tenth of the fireplace opening.

Much depends upon the throat for a good draft. The back of the fireplace is curved forward beginning from a point a little less than half way up from the hearth and extending to the top and front of the fireplace opening, with which it forms a long, nar-

throat, in which is snugly fitted the damper. Immediately above the damper and on both sides, but not on the back, the brickwork should be narrowed in to the size of the flue, forming the smoke chamber.

The flue should always be started on a line with the middle of the fireplace and should go up vertically as shown at A in Figure 2. It may then be jogged over on the floor above, if desired. In case the walls of the smoke chamber are drawn over to a flue on one side as at B, or if the flue is run at an angle as at C, the result will be an uneven fire, for it will burn better on one side than on the other.

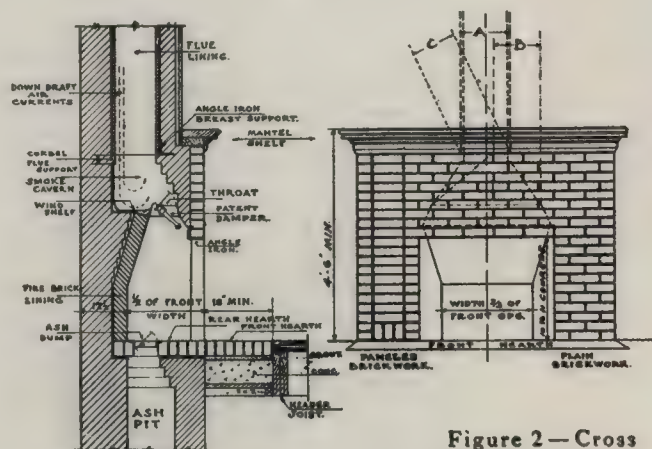


Figure 2—Cross section and elevation of a fireplace.

row outlet for the smoke, about four inches wide. This is known as the throat. (See Figure 2.) This forward curve of the back throws the smoke and flame forward to the throat, and at the same time forms a shelf above, which is very effective as a means for deflecting any down drafts in the chimney.

It is generally best to place a damper in the throat, completely filling it, for regulation of the draft. There are two types of dampers in use, one a simple, flat damper, and the other a patent combination of damper and throat, sometimes known as a dome damper, shown in Figure 2. The flat damper fills the opening of the throat, which should be not less than four inches above the top of the fireplace opening.

Commercial Flue Linings

Outside Dimensions	Inside Area
8 by 8 inches	37 square inches
8 by 12 inches	70 square inches
12 by 12 inches	105 square inches
12 by 16 inches	145 square inches

The dome damper is so constructed as to make a smooth, sloping surface, back and front, up to the

CHIMNEY AND FLUE

Every chimney should be tightly built of solid brick and, if possible, its entire height lined with terra cotta flue lining. Care should be taken to make sure that all joints are well cemented and all spaces between lining and brickwork are tightly filled with mortar, for openings in joints not only check the draft but are a fire menace.

When offsets from one story to another are necessary, they should be gradual and never more than at an angle of 30 degrees from vertical. Soot will deposit if abrupt offsets occur, choking the flue and making cleaning difficult.

As a final precaution, if two or more flues are contained in one chimney, they should always be separated by a brick partition four inches thick, bonded to the outside brickwork.

VARIOUS GENERAL INFORMATION

SHIPPING INFORMATION AND MIXING PRIVILEGES

While large stocks of materials are carried at all times, and shipment can usually be made on short notice, either by rail or truck, these excellent shipping facilities work more smoothly when orders are placed well in advance. When ordering, your co-operation in this respect would be welcomed.

Minimum Shipping Weights

Brick, Building Tile, and Drain Tile carry the same freight rate and may be shipped in mixed car lots—MINIMUM CARLOAD 50,000 pounds.

Sewer Pipe, Flue Lining and Perforated Bell End Pipe each carry the same freight rate which is slightly higher than brick. — MINIMUM CARLOAD 30,000 pounds.

(See Note Below)

Mixing Privileges

Sewer Pipe, Flue Lining and Perforated Bell End Pipe may be mixed with Brick or Building Tile, etc., for shipments to most points on the C.N.R. and C.P.R. and each carried its own regular freight rate. MINIMUM CARLOAD 50,000 pounds.

(See Note Below)

Claims for Adjustments

In loading, every possible care is taken to avoid breakage in shipment. While this is usually quite adequate, and damage is seldom done, we can not assume responsibility for this. Any breakage should be reported immediately to your local railroad agent, as claims for such adjustments must be made at the receiving end.

Product Weights

Because of the fact that weights of various clay products will vary slightly from time to time, they can not be included in this catalogue. They are, however, included in our latest price list, and may be obtained by referring to this.

Note: Present wartime minimums for carload shipments of brick, tile, etc., or mixed carload call for 65,000 pounds, for sewer pipe, flue lining, etc., minimum is 35,000 pounds.

COLORED MORTAR

- (1) *Black Mortar:* Black Oxide of Manganese. It requires two pounds per bag of cement for medium shade.
- (2) *Carbon Black:* Black Oxide of Manganese. It requires one pound per bag of cement.
- (3) *Germantown Crepe:* Black Oxide of Manganese.
- (4) *Buff:* Yellow Ochre. It requires ten pounds per bag of cement.
- (5) *Yellow Joint:* Yellow Ochre. Use more than for Buff.

MASONRY WEIGHTS PER CUBIC FOOT

Brick	120 lbs.
Interlocking Tile.....	66 lbs.
Speedtile	80 lbs.

HEIGHT OF NON-LOAD BEARING PARTITIONS

The maximum allowable height for non-bearing partitions, non-bearing enclosing or panel walls, supported firmly and solidly upon a full bed at the bottom, and held firmly at the top, should be as follows:

Size tile	3"	4"	6"	8"	10"
Maximum Height for partitions	12'	16'	20'	26'	30'
Maximum Height for enclosing walls.....				24'	30'

PERMISSABLE INCREASE IN HEIGHT

Non-bearing partitions, and enclosing division or panel walls, when built between rigid cross walls, piers buttresses, pilasters or columns, and properly tied or bonded thereto, may have the heights given in the above table increased as follows:

Ratio of Length To Height of Walls	Increased Height Permitted
Length—1½ times given Ht.	¼ of given Ht.
Length—1 " " "	½ " " "
Length—½ " " "	¾ " " "

ESTIMATING PRACTISE

The dimensions of standard size face brick are approximately 8" x 2 1/4" x 3 3/4". Sometimes, because of special conditions in the clay or shale, or in the kiln burn, the brick may vary slightly from these dimensions.

Table One

Brick Required for Facing Purposes. (Running Bond)

Joint Width	1/4 Inch	3/8 Inch	1/2 Inch
No. of brick	7.2	6.59	6.16

Percentage to be Added for Various Bonds

Common (full header every 5th course)	20% or 1/5
Common (" " " 6th ")	16 2/3% or 1/6
Common (" " " 7th ")	14 1/2% or 1/7
English (" " " 6th ")	16 2/3% or 1/6
Flemish (" " " 6th ")	5 2/3% or 1/18
Double Header (2 hds 1 strchr every 6 course)	8 1/3% or 1/12
Double Header (2 " 1 " " 5 ")	10% or 1/10

Table Two

Estimating Brick Chimney per Lineal Foot

Inside Measurement Brick per Foot

Single Flue, 8 x 8 inches	26
Single Flue, 8 x 12 inches	31
Single Flue, 12 x 12 inches	35
Single Flue, 12 x 16 inches	40
Double Flue, 1 flue 8x8, 1 flue 8x12	49
Double Flue, each 8 x 12 inches	51
Double Flue, 1 flue 12x12, 2 flues 8x12	76

Table Three

Standard Face Brick and Backing Brick Requirements

Thickness of Joint	RUNNING			COMMON			ENGLISH			FLEMISH			DBLE. HDRS.		
				Hdrs. every 7 course			Hdrs. every 6 course			Hdrs. every 5 course			Bond every 5 course		
	Brick Face	Backing Brick		Brick Face	Backing Brick		Brick Face	Backing Brick		Brick Face	Backing Brick		Brick Face	Backing Brick	
		4"	8"		4"	8"		4"	8"		4"	8"		4"	8"
1/4"	7.02	7.02	14.04	8.02	6.02	13.04	8.19	5.85	12.87	7.49	6.55	13.57	7.73	6.31	13.34
3/8"	6.59	6.59	13.18	7.53	5.65	12.24	7.69	5.49	12.08	7.03	6.15	12.74	7.25	5.93	12.52
1/2"	6.16	6.16	12.32	7.04	5.28	11.44	7.19	5.13	11.29	6.57	5.75	11.91	6.78	5.54	11.70

Estimating Interlocking Tile, See Page 18. Estimating Speedtile, See Page 22

QUANTITIES OF MORTAR, CEMENT, LIME AND SAND FOR LAYING 1000 BRICK.

Proportions by Volume			Approximate Quantity of Materials Required 3/8" Joints		
Cement	Lime Putty	Sand	Cement Bags	Lime Putty cu. ft.	Sand cu. ft.
1	2	7 1/2	2	4	15
1	1	5	3	3	15
0	1	2	---	7 1/2	15
0	1	3	---	5	15
0	1	3 1/2	---	4 1/3	15
1	0	2	7 1/2	---	15
1	0	2 1/2	6	---	15
1	0	3	5	---	15

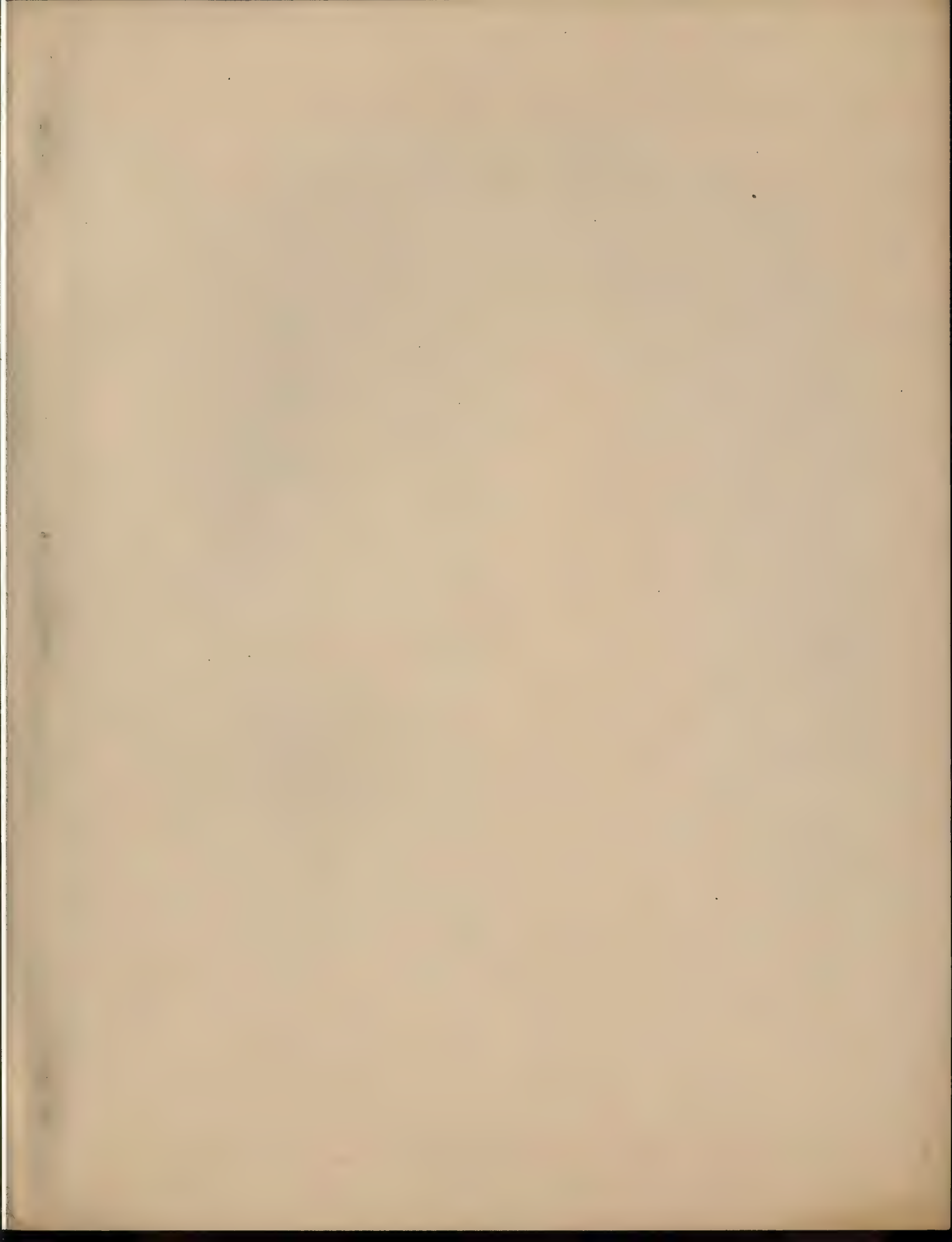
MORTAR QUANTITIES FOR LAYING STRUCTURAL TILE

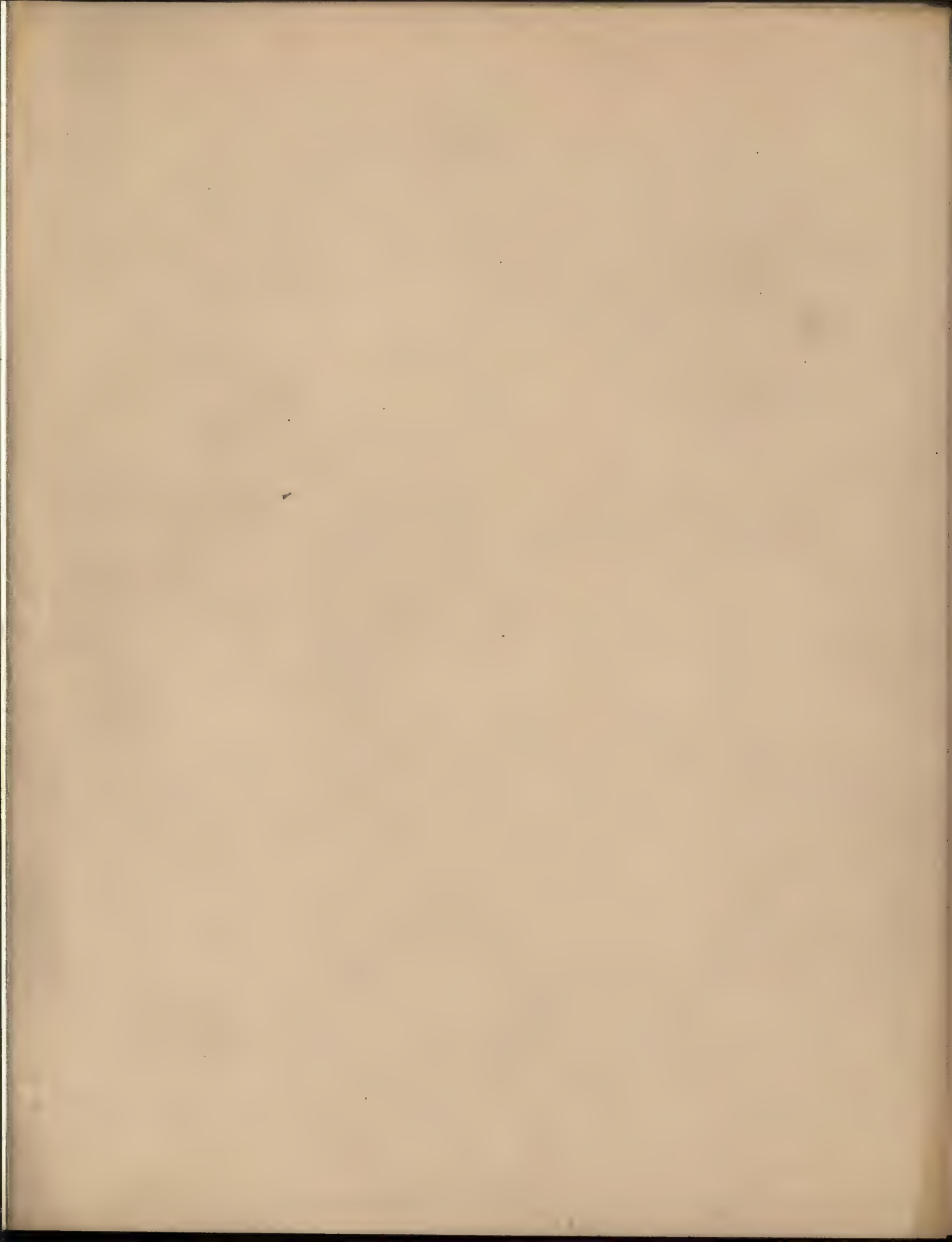
Type of Tile	Wall Thickness	Approx. quantity mortar for 1000 tile, — 3/8" Joints
Speedtile	8" 13 1/4"	1 cu. yards
Interlocking	8" 13 1/4"	1.3 " "
3" x 12" x 12"	3"	1.2 " "
4" x 12" x 12"	4"	1.4 " "
6" x 12" x 12"	6"	1.8 " "
8" x 12" x 12"	8"	2.5 " "

MORTAR QUANTITIES REQUIRED FOR INTERIOR PARING OR PLASTERING

3.13 cu. ft. for 100 sq. ft. of mortar 3/8" thick

4.17 cu. ft. for 100 sq. ft. of mortar 1/2" thick





PRICE LIST

L. E. SHAW, LIMITED

MANUFACTURERS OF

BRICK, STRUCTURAL TILE, DRAIN TILE,
CONCRETE SEWER PIPE, VITRIFIED SEWER PIPE,
FLUE LINING, CONCRETE BLOCK, AGED LIME PUTTY,
FIRE CLAY, ETC.

PLANTS AT—HALIFAX, N. S., LANTZ, N. S.,
NEW GLASGOW, N. S., SYDNEY, N. S., ST. JOHN, N. B.,
CHIPMAN, N. B.

HEAD OFFICE, 74 BEDFORD ROW, HALIFAX, N. S.

GENERAL SHIPPING INFORMATION

It is not always possible to keep stocks of all materials on hand at all times. While shipment of most materials can be made at the time desired it helps immeasurably if advance notice can be given so that production can be scheduled accordingly. When ordering, your co-operation in this respect would be welcomed.

MINIMUM SHIPPING WEIGHTS:

Minimum carload weights are shown for each product. Cars may be loaded beyond these minimums but for loadings less than minimums, freight charges are the same as for a minimum car.

FREIGHT RATES:

Freight rates are the same for Brick, Building Tile or Drain Tile any of which can be shipped in the same car.

Freight rates for concrete block are slightly higher than for Brick, Building Tile or Drain Tile.

Freight rates for concrete or vitrified sewer pipe, Flue Lining or Perforated Pipe are similar and slightly higher than brick or concrete block rates.

Any of these rates may be secured from your nearest Agent.

MIXING PRIVILEGES:

Brick, Building Tile, Drain Tile, Concrete Block, Sewer Pipe and Flue Lining may be shipped together in mixed cars to most points on the C.N.R. or C.P.R. In such cases however, each commodity carries its regular freight rate and the minimum car loading is 65,000 lbs.

Mixing privileges, however, do not include the following points - Bridgetown, N.S., Bridgewater, N.S., Dartmouth, N.S., Shelburne, N.S., Truro, N.S., Yarmouth, N.S., Halifax, N.S., Imperoyal, N.S., Lunenburg, N.S., Middleton, N.S. and Windsor Junction, N.S. for furtherance

LOADING:

In each plant the utmost care is taken in loading to avoid breakage in shipment. Each shipment is loaded, braced and blocked in accordance with such regulations set out by the railroad association authorities. While this is usually quite adequate and damage is seldom done, we cannot assume responsibility for this.

CLAIMS FOR ADJUSTMENTS:

Since all materials are shipped at Buyers Risk, claims for adjustment should be made at the receiving end. Any breakage or shortage should be reported immediately to your local railroad agent.

L. E. SHAW, LIMITED

BRICK

PRICE LIST

EFFECTIVE March 15, 1948

ELMSDALE PLANT

		Price per M F.O.B. Plant
Shubenshale	Smooth Face - Red	\$32.00
"	Vertical Scored Face - Red	\$32.00
"	" " " - Mingled Shds	\$33.00
"	Builders' Special	\$25.00
"	Common Brick for inside use	\$21.00

Approx. Weights-Solids 5 lbs. Perforated $4\frac{1}{2}$ lbs.

CHIPMAN PLANT

		Price per M F.O.B. Plant
Chipman	Smooth Face - Red	\$32.00
"	Rough-Tex " - Red	\$32.00
"	Rough-Tex " - Mingled Shades	\$33.00
"	Tapestry " - Red	\$32.00
"	Tapestry " - Mingled Shades	\$33.00
"	Builders' Special	\$24.00
"	Common Brick for inside use	\$21.00

Approx. Weights-Solids $5\frac{1}{2}$ lbs. Perforated 5 lbs.

NEW GLASGOW PLANT

		Price per M f.o.b. Plant
Glasgo	Vertical Scored Face-Red (Perf. 10 Holes)	\$32.00
"	Vertical Scored " - Mingled Shades (Perf. 10 Holes)	\$33.00
"	Backing Brick (Perforated 10 Hole)	\$21.00
"	Press Brick - Red (Solid)	\$35.00

Approx. weights-Solids $5\frac{1}{2}$ lbs. Perforated $4\frac{1}{2}$ lbs.

ABOVE PRICES ARE FOR CARLOAD LOTS - MINIMUM CAR 65,000 lbs.

FIREPLACE BRICK

Regular face brick are suitable for fireplace construction. They are carefully selected, packed in cartons of eight brick each for an additional \$1.00 per 100 brick.

NOTE: Face Brick only packed in Straw

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

L. E. SHAW LIMITED

STRUCTURAL TILE

PRICE LIST

EFFECTIVE - April 8th, 1948

	<u>Dimension</u>	<u>Approx. Wt.</u>	<u>Price Per M</u>
Speedtile Smooth Face-5 Cell	8x5x12	21#	\$145.00
Speedtile Corduroy Face-5 Cell	8x5x12	21#	\$145.00
Speedtile Scored - 5 Cell (For stucco or backing up)	8x5x12	21#	\$135.00
Speedtile Corduroy Face-3 Cell	8x5x12	19#	\$135.00
Speedtile Scored - 3 Cell (For stucco or backing up)	8x5x12	19#	\$125.00
Speedtile Headers, Corner Tile & Jambs			\$145.00

NOTE: - 3 Cell Speedtile from New Glasgow only

Interlocking Tile Smooth	16#	\$120.00
Interlocking Tile Scored	16#	\$120.00
Interlock-Starters, Jambs & Corners		\$120.00

2x12x12 Split Furring	8 3/4#	\$ 80.00
2x12x12 Partition Tile Scored	14#	\$120.00
3x12x12 Partition Tile Scored	15#	\$110.00
4x12x12 Partition Tile Scored	17 1/2#	\$120.00
6x12x12 Partition Tile Scored	22 1/2#	\$185.00
8x12x12 Partition Tile Scored	31 1/2#	\$245.00

Partition tile may be made to order, smooth both sides or one side only for exposed work, at an additional cost of \$10.00 per M

Structural tile are priced F.O.B. plants; carload lots freight allowed to nearest C.N.R. or C.P.R. siding in the Maritime Provinces.

Minimum carload speedtile - interlocking tile	65,000 lbs.
Minimum carload partition tile	50,000 lbs.

NOTE: When speedtile are to be used for stucco base always specify on orders so that hard burned units only can be supplied.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

L. E. SHAW, LIMITED

SEWER PIPE

PRICE LIST

EFFECTIVE March 15, 1948

<u>VITRIFIED PIPE</u>	<u>4 in.</u>	<u>5 in.</u>	<u>6 in.</u>	<u>8 in.</u>	<u>9 in.</u>	<u>10 in.</u>	<u>12 in.</u>	<u>15 in.</u>
(Bell & Spigot)								
Straight Pipe per 100'	28.00	36.00	42.00	58.00	67.00	82.00	97.00	152.00
Single Junctions ea.	1.20	1.45	1.85	2.95	3.35	4.00	5.30	7.90
Double Junctions ea.	1.50	2.15	2.30	3.35	5.00	5.90	8.00	15.70
Curves (1/8 bends) ea.	1.15	1.40	1.75	2.30	3.20	3.35	4.30	5.90
Elbows (90 degree) ea.	1.15	1.40	1.75	2.30	3.20	3.35	4.30	12.40
Traps ea.	2.80	2.80	3.45	4.85	-	-	-	-
Increasers ea.	1.65	-	2.45	3.35	-	5.10	9.50	-
Reducers ea.	-	-	1.65	2.45	-	3.35	5.10	9.50
Stoppers ea.	.15	-	.20	.25	-	.40	.50	.65
Slants ea.	.90	1.10	1.30	1.70	2.10	2.55	3.00	6.15
Split Pipe per 100'	32.00	-	52.00	70.00	-	100.00	120.00	180.00
Channel per 100'	16.00	-	26.00	35.00	-	50.00	60.00	90.00
Approx. wt per ft.	9#	12½#	14½#	23#	27½#	34½#	42#	62½#
Length	2 ft.	2 ft.	2 ft.	2 ft.	2 ft.	2 ft.	2 ft.	2 ft.

CONCRETE PIPE (Bell & Spigot)

Straight Pipe per 100'	21.50	-	32.50	44.50	51.50	62.50	74.50	117.00
Single Junctions ea.	.90	-	1.40	2.20	2.50	3.00	4.00	5.90
Double Junctions ea.	1.15	-	1.75	2.50	3.80	4.45	6.00	11.80
Curves (1/8 bends) ea.	.85	-	1.30	1.75	2.15	2.50	3.25	4.70
Elbows (90 degree) ea.	.85	-	1.30	1.75	2.15	2.50	3.25	9.40
Increasers ea.	1.25	-	1.85	2.50	-	4.60	7.00	-
Decreasers ea.	-	-	1.25	1.85	-	2.50	4.60	7.00
Channel Pipe (100')	13.00	-	19.50	26.50	-	37.50	45.00	70.00
Apptox. Wt. per ft.	10#	-	19.2#	28.8#	35#	38.8#	52#	93.6#
Length	2½ ft.	-	2½ ft.	2½ ft.	2½ ft.	2½ ft.	2½ ft.	2½ ft.

Perforated drainage pipe available in vitrified & concrete-Prices on request

CONCRETE PIPE-Sizes 18" to 36"

<u>Size</u>	<u>Joint</u>	<u>Type</u>	<u>Length</u>	<u>Approx. Wt. per ft.</u>	<u>Price per ft.</u>
18"	Bell & Spigot	Unreinforced	2½ ft.	124.8#	\$ 1.70
21"	Bell & Spigot	Unreinforced	2½ ft.	154#	\$ 2.00
24"	Bell & Spigot	Unreinforced	2½ ft.	215#	\$ 2.25
30"	Lock Joint	Reinforced	4 ft.	384#	\$ 5.50
36"	Lock Joint	Reinforced	4 ft.	-	\$ 6.50

Above prices F.O.B. car or truck Elmsdale, N.S. 8% Sales Tax included.

Minimum carload Sizes 4" to 12" 35,000 lbs.
Minimum carload over 12" 30,000 lbs.

ALL PIPE SHIPPED AT BUYERS RISK

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

L. E. SHAW, LIMITED

FLUE LINING

PRICE LIST

EFFECTIVE March 15, 1948

<u>Outside Measurement</u>	<u>Length</u>	<u>Approx. Wt.per ft.</u>	<u>Price per 100 ft.</u>
8"x8"	2'	16 lbs.	\$ 52.00
8"x12"	2'	25 lbs.	\$ 70.00
12"x12"	2'	35½ lbs.	\$100.00
12"x15 3/4"	2'	47 lbs.	\$130.00

Above prices F.O.B. Plant, Elmsdale, N.S. - 8% Sales Tax Included.

MINIMUM CARLOAD - 35,000 lbs.

NOTE: Flue lining may be shipped in cars of brick and tile, with each commodity carrying its individual and regular freight rate. Minimum carload 65,000 lbs. Mixing privileges however, do not include the following points - Bridgetown, N.S., Bridgewater, N.S., Dartmouth, N.S., Shelburne, N.S., Truro, N.S., Yarmouth, N.S., Halifax, N.S., Imperoyal, N.S., Lunenburg, N.S., Middleton, N.S., and Windsor Jct. N.S., for furtherance.

GOODS SHIPPED AT BUYERS RISK.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

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12

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L. E. SHAW, LIMITED

DRAIN TILE

PRICE LIST

EFFECTIVE March 15, 1948

	<u>3 inch</u>	<u>4 inch</u>	<u>6 inch</u>
Drain Tile per 1000 ft.	\$ 40.50	\$ 52.50	\$ 76.00
Fittings-Y's, T's, or Bends ea.	.20	.25	.35
Wt.per foot-Elmsdale	(not made)	6 $\frac{1}{4}$ #	12 $\frac{3}{4}$ #
Wt.per foot-Chipman	6 $\frac{1}{2}$ #	8 #	14 #
Length	1 ft.	1 ft.	1 ft.

Above prices F.O.B. plant Elmsdale, N.S. or Chipman, N.B.
8% Sales Tax included
Minimum Carload 50,000 lbs.

Drain Tile and Brick carry the same freight rate and may be shipped together in mixed cars of minimum 65,000 lbs.

NOTE: 3 inch Drain Tile manufactured at Chipman Plant only.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

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L. E. SHAW, LIMITED

MISCELLANEOUS

PRICE LIST

EFFECTIVE March 15, 1948

			<u>Price F.O.B. Plant</u>
FIREBRICK	- Standard	9x4 $\frac{1}{2}$ x2 $\frac{1}{2}$	\$ 135.00 per M
"	- #1 Side Arch	9x4 $\frac{1}{2}$ x2 $\frac{1}{2}$ /2 1/8	\$ 135.00 " M
"	- #2 Side Arch	9x4 $\frac{1}{2}$ x2 $\frac{1}{2}$ /1 3/4	\$ 135.00 " M
"	- #1 End Arch or Wedge	9x4 $\frac{1}{2}$ x2 $\frac{1}{2}$ /1 7/8	\$ 135.00 " M
"	- #2 End Arch or Wedge	9x4 $\frac{1}{2}$ x2 $\frac{1}{2}$ /1 $\frac{1}{2}$	\$ 135.00 " M
"	- Splits	9x4 $\frac{1}{2}$ x1 $\frac{1}{4}$	\$ 135.00 " M
"	- Soaps	9x2 $\frac{1}{2}$ x2 $\frac{1}{4}$	\$ 135.00 " M

		<u>Price F.O.B. Plant</u>
RADIAL WELL LINERS	4 Hole	.04 each
GLASGO FIRECLAY	100# bags	\$ 20.00 per ton
RAW CLAY		2.50 per ton
GROUND CLAY		7.00 per ton
GROUND CLAY IN BAGS		11.00 per ton

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

L. E. SHAW LIMITED

CONCRETE BLOCK

PRICE LIST

EFFECTIVE MARCH 15, 1948

HALIFAX, N.S. PLANT

<u>Dimension</u>	<u>No. Cells</u>	<u>Approx. Weight</u>	<u>F.O.B. Plant Price</u>
8x8x16" Concrete Blk.	3	41 lbs.	.24¢ each
10x8x16" " "	3	56 lbs.	.28¢ "
12x8x16 " "	3	68 lbs.	.32¢ "
8x8x16" Corner " "	3	41 lbs.	.24¢ "

NOTE: Halves - above block are centre scored for cutting into halves.

ST. JOHN, N.B. PLANT

<u>Dimension</u>	<u>No. Cells</u>	<u>Approx. Weight</u>	<u>F.O.B. Plant Price</u> <u>Halves</u> <u>Units</u>
4x8x16" Concrete Blk.	2	21½ lbs.	- .15 each
6x8x16" " "	2	35 lbs.	.13 each .18 "
8x8x16" " "	3	38 lbs.	.16 each .24 "
8x8x16" " "	2	50 lbs.	.16 each .24 "
8x8x16 Corner Block	2	50 lbs.	- .24 "
10x8x16" Concrete Blk.	2	59 lbs.	.22 each .28 "
12x8x16" " "	2	70 lbs.	.24 each .32 "

SYDNEY, N.S. PLANT

<u>Dimension</u>	<u>No. Cells</u>	<u>Approx. Weight</u>	<u>F.O.B. Plant Price</u>
8x8x16" Concrete Blk.	3	41 lbs.	.24¢ each
8x8x16" Corner Blk.	3	41 lbs.	.24¢ each

NOTE: Halves - above block centre scored for cutting into halves.

NOTE: Corners - Eight inch corner block may be used for all wall thicknesses. When used with ten and twelve inch block thickness, the interior wall is filled flush with cement at the corners.

MINIMUM CAR LOAD - 65,000 lbs.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

L. E SHAW, LIMITED

QUARRY TILE

PRICE LIST

EFFECTIVE MARCH 15, 1948

<u>No.</u>	<u>Description</u>	<u>Dimension</u>	<u>Price Including Cartons</u>
400	Standard Quarry Tile	4"x4"x3/4"	.65¢ per sq.ft.
500	Standard Quarry Tile	6"x6"x3/4"	.65¢ per sq.ft.
501	Straight Base, Bull-Nose Top External Angle	6"x6"x3/4"	.65¢ ea.
502	Straight Base, Bull-Nose Top	6"x6"x3/4"	.35¢ ea.
503 R/L	Striaight Base, Bull-Nose Top Internal Angle, Right or Left	6"x6"x3/4"	.65¢ ea.
504	Cove Base Bull-Nose Top	See Sketch	.35¢ ea.
505	Cove Base, Bull-Nose Top Internal Angle	See Sketch	.65¢ ea.
506 R/L	Cove Base, Bull-Nose Top External Angle, Right or Left	See Sketch	.65¢ ea.
507	Double Bull Nose	6x6"x3/4"	.65¢ ea.
509 R/L	Cove Base Bull Nose Top Door Stop, Right or Left	See Sketch	.65¢ ea.
510	Promenade Quarry Tile	6"x9"x3/4"	.65¢ per Sq.ft.
511	Cove Base Square Top	See Sketch	.35¢ ea.
512	Cove Base Square Top Internal Angle	See Sketch	.65¢ ea.
513 R/L	Cove Base, Square Top External Angle, Right or Left	See Sketch	.65¢ ea.
514 R/L	Cove Base, Square Top Door Stop, Right or Left	See Sketch	.65¢ ea.
515	Standard Half Quarry Tile		.65¢ per sq.ft.

Above prices are F.O.B. Chipman, N.B.

Sold only in Cartons of 10 Sq. Ft. Each.

WEIGHTS

Standard Units including Cartons	-	8.5 lbs. per sq. ft.
Base & Specials, including Crates	-	2.5 lbs. each

NOTE

When tile are to be used for outside work always specify on orders so that special hard burned units will be supplied.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

L. E. SHAW, LIMITED

GLASS BLOCK

Price List

Effective March 15, 1948

<u>Series</u>	<u>Dimensions</u>	<u>Price Per 100</u>
200 Series	5 3/4x5 3/4x3 7/8	\$ 59.00
300 Series	7 3/4x7 3/4x3 7/8	104.00
350 Series-Prism	7 3/4x7 3/4x3 7/8	104.00
400 Series	11 3/4x11 3/4x3 7/8	266.00
200 Corner Block	5 3/4"	105.00
300 Corner Block	7 3/4"	198.00
300R Radial	7 3/4	165.00
317R Radial	7 3/4	165.00

Above prices F.O.B. Halifax, N.S. Moncton, N.B., Saint John, N.B.
Fredericton, N.S.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

